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# SEQUENCE LISTING

<110> Gerardo Castillo  
Alan Snow

<120> Therapeutic and Diagnostic Applications  
of Laminin and Laminin-Derived Protein Fragments

<130> PROTEO.P03

<140> 09/938,275

<141> 2001-08-22

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<309> 1990-11-01

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<309> 1990-11-01

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5

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15

Tyr Tyr Val Ala His Gln Asn Gln Met Asp Tyr Ala Thr Leu Gln Leu

20

25

30

Gln Glu Gly Arg Leu His Phe Met Phe Asp Leu Gly Lys Gly Arg Thr

35

40

45

Lys Val Ser His Pro Ala Leu Leu Ser Asp Gly Lys Trp His Thr Val

50

55

60

Lys Thr Glu Tyr Ile Lys Arg Lys Ala Phe Met Thr Val Asp Gly Gln

65

70

75

80

Glu Ser Pro Ser Val Thr Val Val Gly Asn Ala Thr Thr Leu Asp Val

85

90

95

Glu Arg Lys Leu Tyr Leu Gly Gly Leu Pro Ser His Tyr Arg Ala Arg

100

105

110

Asn Ile Gly Thr Ile Thr His Ser Ile Pro Ala Cys Ile Gly Glu Ile

115

120

125

Met Val Asn Gly Gln Gln Leu Asp Lys Asp Arg Pro Leu Ser Ala Ser

130

135

140

Ala Val Asp Arg Cys Tyr Val Val Ala Gln Glu Gly Thr Phe Phe Glu  
 145 150 155 160  
 Gly Ser Gly Tyr Ala Ala Leu Val Lys Glu Gly Tyr Lys Val Arg Leu  
 165 170 175  
 Asp

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<300>  
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 <309> 1992-05-01

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 1 5 10 15  
 Tyr Tyr Met Ala His Gln Asn Gln Ala Asp Tyr Ala Val Leu Gln Leu  
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 His Gly Gly Arg Leu His Phe Met Phe Asp Leu Gly Lys Gly Arg Thr  
 35 40 45  
 Lys Val Ser His Pro Ala Leu Leu Ser Asp Gly Lys Trp His Thr Val  
 50 55 60  
 Lys Thr Asp Tyr Val Lys Arg Lys Gly Phe Ile Thr Val Asp Gly Arg  
 65 70 75 80  
 Glu Ser Pro Met Val Thr Val Val Gly Asp Gly Thr Met Leu Asp Val  
 85 90 95  
 Glu Gly Leu Phe Tyr Leu Gly Gly Leu Pro Ser Gln Tyr Gln Ala Arg  
 100 105 110  
 Lys Ile Gly Asn Ile Thr His Ser Ile Pro Ala Cys Ile Gly Asp Val  
 115 120 125  
 Thr Val Asn Ser Lys Gln Leu Asp Lys Asp Ser Pro Val Ser Ala Phe  
 130 135 140  
 Thr Val Asn Arg Cys Tyr Ala Val Ala Gln Glu Gly Thr Tyr Phe Asp  
 145 150 155 160  
 Gly Ser Gly Tyr Ala Ala Leu Val Lys Glu Gly Tyr Lys Val Gln Ser  
 165 170 175  
 Asp

<210> 4  
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 Ile Leu Asn Leu Ala Thr Asn Ala His Ile Ser Ala Asn Ala Thr Cys  
 35 40 45  
 Gly Glu Lys Gly Pro Glu Met Phe Cys Lys Leu Val Glu His Val Pro

50		55		60
Gly Arg Pro Val Arg	His Ala Gln Cys Arg	Val Cys Asp Gly Asn Ser		
65	70	75	80	
Thr Asn Pro Arg	Glu Arg His Pro Ile Ser	His Ala Ile Asp Gly Thr		
	85	90	95	
Asn Asn Trp Trp	Gln Ser Pro Ser Ile Gln Asn Gly Arg	Glu Tyr His		
	100	105	110	
Trp Val Thr Val Thr	Leu Asp Leu Arg Gln Val Phe Gln Val Ala Tyr			
	115	120	125	
Ile Ile Ile Lys	Ala Ala Asn Ala Pro Arg Pro Gly Asn Trp Ile Leu			
	130	135	140	
Glu Arg Ser Val Asp	Gly Val Lys Phe Lys Pro Trp Gln Tyr Tyr Ala			
145	150	155	160	
Val Ser Asp Thr	Glu Cys Leu Thr Arg Tyr Lys Ile Thr Pro Arg Arg			
	165	170	175	
Gly Pro Pro Thr	Tyr Arg Ala Asp Asn Glu Val Ile Cys Thr Ser Tyr			
	180	185	190	
Tyr Ser Lys Leu	Val Pro Leu Glu His Gly Glu Ile His Thr Ser Leu			
	195	200	205	
Ile Asn Gly Arg	Pro Ser Ala Asp Asp Pro Ser Pro Gln Leu Leu Glu			
	210	215	220	
Phe Thr Ser Ala	Arg Tyr Ile Arg Leu Arg Leu Gln Arg Ile Arg Thr			
225	230	235	240	
Leu Asn Ala Asp	Leu Met Thr Leu Ser His Arg Asp Leu Arg Asp Leu			
	245	250	255	
Asp Pro Ile Val	Thr Arg Arg Tyr Tyr Tyr Ser Ile Lys Asp Ile Ser			
	260	265	270	
Val Gly Gly Met	Cys Ile Cys Tyr Gly His Ala Ser Ser Cys Pro Trp			
	275	280	285	
Asp Glu Glu Ala	Lys Gln Leu Gln Cys Gln Cys Glu His Asn Thr Cys			
	290	295	300	
Gly Glu Ser Cys	Asp Arg Cys Cys Pro Gly Tyr His Gln Gln Pro Trp			
305	310	315	320	
Arg Pro Gly Thr	Ile Ser Ser Gly Asn Glu Cys Glu Glu Cys Asn Cys			
	325	330	335	
His Asn Lys Ala	Lys Asp Cys Tyr Tyr Asp Ser Ser Val Ala Lys Glu			
	340	345	350	
Arg Arg Ser Leu	Asn Thr Ala Gly Gln Tyr Ser Gly Gly Val Cys			
	355	360	365	
Val Asn Cys Ser	Gln Asn Thr Thr Gly Ile Asn Cys Glu Thr Cys Ile			
	370	375	380	
Asp Gln Tyr Tyr	Arg Pro His Lys Val Ser Pro Tyr Asp Asp His Pro			
385	390	395	400	
Cys Arg Pro Cys	Asn Cys Asp Pro Val Gly Ser Leu Ser Ser Val Cys			
	405	410	415	
Ile Lys Asp Asp	Arg His Ala Asp Leu Ala Asn Gly Lys Trp Pro Gly			
	420	425	430	
Gln Cys Pro Cys	Arg Lys Gly Tyr Ala Gly Asp Lys Cys Asp Arg Cys			
	435	440	445	
Gln Phe Gly Tyr	Arg Gly Phe Pro Asn Cys Ile Pro Cys Asp Cys Arg			
	450	455	460	
Thr Val Gly Ser	Leu Asn Glu Asp Pro Cys Ile Glu Pro Cys Leu Cys			
465	470	475	480	
Lys Lys Asn Val	Glu Gly Lys Asn Cys Asp Arg Cys Lys Pro Gly Phe			
	485	490	495	
Tyr Asn Leu Lys	Glu Arg Asn Pro Glu Gly Cys Ser Glu Cys Phe Cys			
	500	505	510	
Phe Gly Val Ser	Gly Val Cys Asp Ser Leu Thr Trp Ser Ile Ser Gln			
	515	520	525	
Val Thr Asn Met	Ser Gly Trp Leu Val Thr Asp Leu Met Ser Thr Asn			
530	535	540		

Lys	Ile	Arg	Ser	Gln	Gln	Asp	Val	Leu	Gly	Gly	His	Arg	Gln	Ile	Ser
545					550					555					560
Ile	Asn	Asn	Thr	Ala	Val	Met	Gln	Arg	Leu	Thr	Ser	Thr	Tyr	Tyr	Trp
				565					570					575	
Ala	Ala	Pro	Glu	Ala	Tyr	Leu	Gly	Asn	Lys	Leu	Thr	Ala	Phe	Gly	Gly
			580					585					590		
Phe	Leu	Lys	Tyr	Thr	Val	Ser	Tyr	Asp	Ile	Pro	Val	Glu	Thr	Val	Asp
		595					600					605			
Ser	Asp	Leu	Met	Ser	His	Ala	Asp	Ile	Ile	Ile	Lys	Gly	Asn	Gly	Leu
	610					615					620				
Thr	Ile	Ser	Thr	Arg	Ala	Glu	Gly	Leu	Ser	Leu	Gln	Pro	Tyr	Glu	Glu
625					630					635					640
Tyr	Phe	Asn	Val	Val	Arg	Leu	Val	Pro	Glu	Asn	Phe	Arg	Asp	Phe	Asn
				645					650					655	
Thr	Arg	Arg	Glu	Ile	Asp	Arg	Asp	Gln	Leu	Met	Thr	Val	Leu	Ala	Asn
			660					665					670		
Val	Thr	His	Leu	Leu	Ile	Arg	Ala	Asn	Tyr	Asn	Ser	Ala	Lys	Met	Ala
		675					680					685			
Leu	Tyr	Arg	Leu	Asp	Ser	Val	Ser	Leu	Asp	Ile	Ala	Ser	Pro	Asn	Ala
	690					695					700				
Ile	Asp	Leu	Ala	Val	Ala	Ala	Asp	Val	Glu	His	Cys	Glu	Cys	Pro	Gln
705					710					715					720
Gly	Tyr	Thr	Gly	Thr	Ser	Cys	Glu	Ala	Cys	Leu	Pro	Gly	Tyr	Tyr	Arg
				725					730					735	
Val	Asp	Gly	Ile	Leu	Phe	Gly	Gly	Ile	Cys	Gln	Pro	Cys	Glu	Cys	His
			740					745					750		
Gly	His	Ala	Ser	Glu	Cys	Asp	Ile	His	Gly	Ile	Cys	Ser	Val	Cys	Thr
		755					760					765			
His	Asn	Thr	Thr	Gly	Asp	His	Cys	Glu	Gln	Cys	Leu	Pro	Gly	Phe	Tyr
	770					775					780				
Gly	Thr	Pro	Ser	Arg	Gly	Thr	Pro	Gly	Asp	Cys	Gln	Pro	Cys	Ala	Cys
785					790					795					800
Pro	Leu	Ser	Ile	Asp	Ser	Asn	Asn	Phe	Ser	Pro	Thr	Cys	His	Leu	Thr
				805					810					815	
Asp	Gly	Glu	Glu	Val	Val	Cys	Asp	Gln	Cys	Ala	Pro	Gly	Tyr	Ser	Gly
			820					825					830		
Ser	Trp	Cys	Glu	Arg	Cys	Ala	Asp	Gly	Tyr	Tyr	Gly	Asn	Pro	Thr	Val
		835					840					845			
Pro	Gly	Gly	Thr	Cys	Val	Pro	Cys	Asn	Cys	Ser	Gly	Asn	Val	Asp	Pro
		850				855					860				
Leu	Glu	Ala	Gly	His	Cys	Asp	Ser	Val	Thr	Gly	Glu	Cys	Leu	Lys	Cys
865					870					875					880
Leu	Trp	Asn	Thr	Asp	Gly	Ala	His	Cys	Glu	Arg	Cys	Ala	Asp	Gly	Phe
				885					890					895	
Tyr	Gly	Asp	Ala	Val	Thr	Ala	Lys	Asn	Cys	Arg	Ala	Cys	Asp	Cys	His
			900					905					910		
Glu	Asn	Gly	Ser	Leu	Ser	Gly	Val	Cys	His	Leu	Glu	Thr	Gly	Leu	Cys
		915					920					925			
Asp	Cys	Lys	Pro	His	Val	Thr	Gly	Gln	Gln	Cys	Asp	Gln	Cys	Leu	Ser
		930				935					940				
Gly	Tyr	Tyr	Gly	Leu	Asp	Thr	Gly	Leu	Gly	Cys	Val	Pro	Cys	Asn	Cys
945					950					955					960
Ser	Val	Glu	Gly	Ser	Val	Ser	Asp	Asn	Cys	Thr	Glu	Glu	Gly	Gln	Cys
				965					970					975	
His	Cys	Gly	Pro	Gly	Val	Ser	Gly	Lys	Gln	Cys	Asp	Arg	Cys	Ser	His
			980					985					990		
Gly	Phe	Tyr	Ala	Phe	Gln	Asp	Gly	Gly	Cys	Thr	Pro	Cys	Asp	Cys	Ala
		995					1000					1005			
His	Thr	Gln	Asn	Asn	Cys	Asp	Pro	Ala	Ser	Gly	Glu	Cys	Leu	Cys	Pro
	1010					1015					1020				
Pro	His	Thr	Gln	Gly	Leu	Lys	Cys	Glu	Glu	Cys	Glu	Glu	Ala	Tyr	Trp

1025		1030		1035		1040
Gly Leu Asp Pro	Glu Gln Gly Cys Gln	Ala Cys Asn Cys Ser	Ala Val			
	1045	1050	1055			
Gly Ser Thr Ser	Ala Gln Cys Asp	Val Leu Ser Gly His	Cys Pro Cys			
	1060	1065	1070			
Lys Lys Gly Phe	Gly Gly Gln Ser	Cys His Gln Cys Ser	Leu Gly Tyr			
	1075	1080	1085			
Arg Ser Phe Pro	Asp Cys Val Pro	Cys Gly Cys Asp	Leu Arg Gly Thr			
	1090	1095	1100			
Leu Pro Asp Thr	Cys Asp Leu Glu	Gln Gly Leu Cys Ser	Cys Ser Glu			
1105	1110	1115	1120			
Asp Ser Gly Thr	Cys Ser Cys Lys	Glu Asn Val Val	Gly Pro Gln Cys			
	1125	1130	1135			
Ser Lys Cys Gln	Ala Gly Thr Phe	Ala Leu Arg Gly	Asp Asn Pro Gln			
	1140	1145	1150			
Gly Cys Ser Pro	Cys Phe Cys Phe	Gly Leu Ser Gln	Leu Cys Ser Glu			
	1155	1160	1165			
Leu Glu Gly Tyr	Val Arg Thr Leu	Ile Thr Leu Ala	Ser Asp Gln Pro			
1170	1175	1180				
Leu Leu His Val	Val Ser Gln Ser	Asn Leu Lys Gly	Thr Ile Glu Gly			
1185	1190	1195	1200			
Val His Phe Gln	Pro Pro Asp Thr	Leu Leu Asp Ala	Glu Ala Val Arg			
	1205	1210	1215			
Gln His Ile Tyr	Ala Glu Pro Phe	Tyr Trp Arg Leu	Pro Lys Gln Phe			
	1220	1225	1230			
Gln Gly Asp Gln	Leu Leu Ala Tyr	Gly Gly Lys Leu	Gln Tyr Ser Val			
	1235	1240	1245			
Ala Phe Tyr Ser	Thr Leu Gly Thr	Gly Thr Ser Asn	Tyr Glu Pro Gln			
	1250	1255	1260			
Val Leu Ile Lys	Gly Gly Arg Ala	Arg Lys His Val	Ile Tyr Met Asp			
1265	1270	1275	1280			
Ala Pro Ala Pro	Glu Asn Gly Val	Arg Gln Asp Tyr	Glu Val Gln Met			
	1285	1290	1295			
Lys Glu Glu Phe	Trp Lys Tyr Phe	Asn Ser Val Ser	Glu Lys His Val			
	1300	1305	1310			
Thr His Ser Asp	Phe Met Ser Val	Leu Ser Asn Ile	Asp Tyr Ile Leu			
	1315	1320	1325			
Ile Lys Ala Ser	Tyr Gly Gln Gly	Leu Gln Gln Ser	Arg Ile Ala Asn			
	1330	1335	1340			
Ile Ser Met Glu	Val Gly Arg Lys	Ala Val Glu Leu	Pro Ala Glu Gly			
1345	1350	1355	1360			
Glu Ala Ala Leu	Leu Leu Glu Leu	Cys Val Cys Pro	Pro Gly Thr Ala			
	1365	1370	1375			
Gly His Ser Cys	Gln Asp Cys Ala	Pro Gly Tyr Tyr	Arg Glu Lys Leu			
	1380	1385	1390			
Pro Glu Ser Gly	Gly Arg Gly Pro	Arg Pro Leu Leu	Ala Pro Cys Val			
	1395	1400	1405			
Pro Cys Asn Cys	Asn Asn His Ser	Asp Val Cys Asp	Pro Glu Thr Gly			
	1410	1415	1420			
Lys Cys Leu Ser	Cys Arg Asp His	Thr Ser Gly Asp	His Cys Glu Leu			
1425	1430	1435	1440			
Cys Ala Ser Gly	Tyr Tyr Gly Lys	Val Thr Gly Leu	Pro Gly Asp Cys			
	1445	1450	1455			
Thr Pro Cys Thr	Cys Pro His His	Pro Pro Phe Ser	Phe Ser Pro Thr			
	1460	1465	1470			
Cys Val Val Glu	Gly Asp Ser Asp	Phe Arg Cys Asn	Ala Cys Leu Pro			
	1475	1480	1485			
Gly Tyr Glu Gly	Gln Tyr Cys Glu	Arg Cys Ser Ala	Gly Tyr His Gly			
	1490	1495	1500			
Asn Pro Arg Ala	Ala Gly Gly Ser	Cys Gln Thr Cys	Asp Cys Asn Pro			
1505	1510	1515	1520			

Gln Gly Ser Val His Ser Asp Cys Asp Arg Ala Ser Gly Gln Cys Val  
 1525 1530 1535  
 Cys Lys Pro Gly Ala Thr Gly Leu His Cys Glu Lys Cys Leu Pro Arg  
 1540 1545 1550  
 His Ile Leu Met Glu Ser Asp Cys Val Ser Cys Asp Asp Asp Cys Val  
 1555 1560 1565  
 Gly Pro Leu Leu Asn Asp Leu Asp Ser Val Gly Asp Ala Val Leu Ser  
 1570 1575 1580  
 Leu Asn Leu Thr Gly Val Ser Pro Ala Pro Tyr Gly Ile Leu Glu Asn  
 1585 1590 1595 1600  
 Leu Glu Asn Thr Thr Lys Tyr Phe Gln Arg Tyr Leu Ile Lys Glu Asn  
 1605 1610 1615  
 Ala Lys Lys Ile Arg Ala Glu Ile Gln Leu Glu Gly Ile Ala Glu Gln  
 1620 1625 1630  
 Thr Glu Asn Leu Gln Lys Glu Leu Thr Arg Val Leu Ala Arg His Gln  
 1635 1640 1645  
 Lys Val Asn Ala Glu Met Glu Arg Thr Ser Asn Gly Thr Gln Ala Leu  
 1650 1655 1660  
 Ala Thr Phe Ile Glu Gln Leu His Ala Asn Ile Lys Glu Ile Thr Glu  
 1665 1670 1675 1680  
 Lys Val Ala Thr Leu Asn Gln Thr Ala Arg Lys Asp Phe Gln Pro Pro  
 1685 1690 1695  
 Val Ser Ala Leu Gln Ser Met His Gln Asn Ile Ser Ser Leu Leu Gly  
 1700 1705 1710  
 Leu Ile Lys Glu Arg Asn Phe Thr Glu Met Gln Gln Asn Ala Thr Leu  
 1715 1720 1725  
 Glu Leu Lys Ala Ala Lys Asp Leu Leu Ser Arg Ile Gln Lys Arg Phe  
 1730 1735 1740  
 Gln Lys Pro Gln Glu Lys Leu Lys Ala Leu Lys Glu Ala Asn Ser Leu  
 1745 1750 1755 1760  
 Leu Ser Asn His Ser Glu Lys Leu Gln Ala Ala Glu Glu Leu Leu Lys  
 1765 1770 1775  
 Glu Ala Gly Ser Lys Thr Gln Glu Ser Asn Leu Leu Leu Leu Leu Val  
 1780 1785 1790  
 Lys Ala Asn Leu Lys Glu Glu Phe Gln Glu Lys Lys Leu Arg Val Gln  
 1795 1800 1805  
 Glu Glu Gln Asn Val Thr Ser Glu Leu Ile Ala Lys Gly Arg Glu Trp  
 1810 1815 1820  
 Val Asp Ala Ala Gly Thr His Thr Ala Ala Ala Gln Asp Thr Leu Thr  
 1825 1830 1835 1840  
 Gln Leu Glu His His Arg Asp Glu Leu Leu Leu Trp Ala Arg Lys Ile  
 1845 1850 1855  
 Arg Ser His Val Asp Asp Leu Val Met Gln Met Ser Lys Arg Arg Ala  
 1860 1865 1870  
 Arg Asp Leu Val His Arg Ala Glu Gln His Ala Ser Glu Leu Gln Ser  
 1875 1880 1885  
 Arg Ala Gly Ala Leu Asp Arg Asp Leu Glu Asn Val Arg Asn Val Ser  
 1890 1895 1900  
 Leu Asn Ala Thr Ser Ala Ala His Val His Ser Asn Ile Gln Thr Leu  
 1905 1910 1915 1920  
 Thr Glu Glu Ala Glu Met Leu Ala Ala Asp Ala His Lys Thr Ala Asn  
 1925 1930 1935  
 Lys Thr Asp Leu Ile Ser Glu Ser Leu Ala Ser Arg Gly Lys Ala Val  
 1940 1945 1950  
 Leu Gln Arg Ser Ser Arg Phe Leu Lys Glu Ser Val Gly Thr Arg Arg  
 1955 1960 1965  
 Lys Gln Gln Gly Ile Thr Met Lys Leu Asp Glu Leu Lys Asn Leu Thr  
 1970 1975 1980  
 Ser Gln Phe Gln Glu Ser Val Asp Asn Ile Thr Lys Gln Ala Asn Asp  
 1985 1990 1995 2000  
 Ser Leu Ala Met Leu Arg Glu Ser Pro Gly Gly Met Arg Glu Lys Gly

2005					2010					2015						
Arg	Lys	Ala	Arg	Glu	Leu	Ala	Ala	Ala	Ala	Asn	Glu	Ser	Ala	Val	Lys	
2020					2025					2030						
Thr	Leu	Glu	Asp	Val	Leu	Ala	Leu	Ser	Leu	Arg	Val	Phe	Asn	Thr	Ser	
2035					2040					2045						
Glu	Asp	Leu	Ser	Arg	Val	Asn	Ala	Thr	Val	Gln	Glu	Thr	Asn	Asp	Leu	
2050					2055					2060						
Leu	His	Asn	Ser	Thr	Met	Thr	Thr	Leu	Leu	Ala	Gly	Arg	Lys	Met	Lys	
2065					2070					2075					2080	
Asp	Met	Glu	Met	Gln	Ala	Asn	Leu	Leu	Leu	Asp	Arg	Leu	Lys	Pro	Leu	
2085					2090					2095						
Lys	Thr	Leu	Glu	Gln	Asn	Leu	Ser	Arg	Asn	Leu	Ser	Glu	Ile	Lys	Leu	
2100					2105					2110						
Leu	Ile	Ser	Arg	Ala	Arg	Lys	Gln	Ala	Ala	Ser	Ile	Lys	Val	Ala	Val	
2115					2120					2125						
Ser	Ala	Asp	Arg	Asp	Cys	Ile	Arg	Ala	Tyr	Gln	Pro	Gln	Thr	Ser	Ser	
2130					2135					2140						
Thr	Asn	Tyr	Asn	Thr	Leu	Ile	Leu	Asn	Val	Lys	Thr	Gln	Glu	Pro	Asp	
2145					2150					2155					2160	
Asn	Leu	Leu	Phe	Tyr	Leu	Gly	Ser	Ser	Ser	Ser	Ser	Asp	Phe	Leu	Ala	
2165					2170					2175						
Val	Glu	Met	Arg	Arg	Gly	Lys	Val	Ala	Phe	Leu	Trp	Asp	Leu	Gly	Ser	
2180					2185					2190						
Gly	Ser	Thr	Arg	Leu	Glu	Phe	Pro	Glu	Val	Ser	Ile	Asn	Asn	Asn	Arg	
2195					2200					2205						
Trp	His	Ser	Ile	Tyr	Ile	Thr	Arg	Phe	Gly	Asn	Met	Gly	Ser	Leu	Ser	
2210					2215					2220						
Val	Lys	Glu	Ala	Ser	Ala	Ala	Glu	Asn	Pro	Pro	Val	Arg	Thr	Ser	Lys	
2225					2230					2235					2240	
Ser	Pro	Gly	Pro	Ser	Lys	Val	Leu	Asp	Ile	Asn	Asn	Ser	Thr	Leu	Met	
2245					2250					2255						
Phe	Val	Gly	Gly	Leu	Gly	Gly	Gln	Ile	Lys	Lys	Ser	Pro	Ala	Val	Lys	
2260					2265					2270						
Val	Thr	His	Phe	Lys	Gly	Cys	Met	Gly	Glu	Ala	Phe	Leu	Asn	Gly	Lys	
2275					2280					2285						
Ser	Ile	Gly	Leu	Trp	Asn	Tyr	Ile	Glu	Arg	Glu	Gly	Lys	Cys	Asn	Gly	
2290					2295					2300						
Cys	Phe	Gly	Ser	Ser	Gln	Asn	Glu	Asp	Ser	Ser	Phe	His	Phe	Asp	Gly	
2305					2310					2315					2320	
Ser	Gly	Tyr	Ala	Met	Val	Glu	Lys	Thr	Leu	Arg	Pro	Thr	Val	Thr	Gln	
2325					2330					2335						
Ile	Val	Ile	Leu	Phe	Ser	Thr	Phe	Ser	Pro	Asn	Gly	Leu	Leu	Phe	Tyr	
2340					2345					2350						
Leu	Ala	Ser	Asn	Gly	Thr	Lys	Asp	Phe	Leu	Ser	Ile	Glu	Leu	Val	Arg	
2355					2360					2365						
Gly	Arg	Val	Lys	Val	Met	Val	Asp	Leu	Gly	Ser	Gly	Pro	Leu	Thr	Leu	
2370					2375					2380						
Met	Thr	Asp	Arg	Arg	Tyr	Asn	Asn	Gly	Thr	Trp	Tyr	Lys	Ile	Ala	Phe	
2385					2390					2395					2400	
Gln	Arg	Asn	Arg	Lys	Gln	Gly	Leu	Leu	Ala	Val	Phe	Asp	Ala	Tyr	Asp	
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Thr	Ser	Asp	Lys	Glu	Thr	Lys	Gln	Gly	Glu	Thr	Pro	Gly	Ala	Ala	Ser	
2420					2425					2430						
Asp	Leu	Asn	Arg	Leu	Glu	Lys	Asp	Leu	Ile	Tyr	Val	Gly	Gly	Leu	Pro	
2435					2440					2445						
His	Ser	Lys	Ala	Val	Arg	Lys	Gly	Val	Ser	Ser	Arg	Ser	Tyr	Val	Gly	
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Cys	Ile	Lys	Asn	Leu	Glu	Ile	Ser	Arg	Ser	Thr	Phe	Asp	Leu	Leu	Arg	
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Asn	Ser	Tyr	Gly	Val	Arg	Lys	Gly	Cys	Ala	Leu	Glu	Pro	Ile	Gln	Ser	
2485					2490					2495						

Val	Ser	Phe	Leu	Arg	Gly	Gly	Tyr	Val	Glu	Met	Pro	Pro	Lys	Ser	Leu	2500	2505	2510
Ser	Pro	Glu	Ser	Ser	Leu	Leu	Ala	Thr	Phe	Ala	Thr	Lys	Asn	Ser	Ser	2515	2520	2525
Gly	Ile	Leu	Leu	Val	Ala	Leu	Gly	Lys	Asp	Ala	Glu	Glu	Ala	Gly	Gly	2530	2535	2540
Ala	Gln	Ala	His	Val	Pro	Phe	Phe	Ser	Ile	Met	Leu	Leu	Glu	Gly	Arg	2545	2550	2555
Ile	Glu	Val	His	Val	Asn	Ser	Gly	Asp	Gly	Thr	Ser	Leu	Arg	Lys	Ala	2565	2570	2575
Leu	Leu	His	Ala	Pro	Thr	Gly	Ser	Tyr	Ser	Asp	Gly	Gln	Glu	His	Ser	2580	2585	2590
Ile	Ser	Leu	Val	Arg	Asn	Arg	Arg	Val	Ile	Thr	Ile	Gln	Val	Asp	Glu	2595	2600	2605
Asn	Ser	Pro	Val	Glu	Met	Lys	Leu	Gly	Pro	Leu	Thr	Glu	Gly	Lys	Thr	2610	2615	2620
Ile	Asp	Ile	Ser	Asn	Leu	Tyr	Ile	Gly	Gly	Leu	Pro	Glu	Asp	Lys	Ala	2625	2630	2635
Thr	Pro	Met	Leu	Lys	Met	Arg	Thr	Ser	Phe	His	Gly	Cys	Ile	Lys	Asn	2645	2650	2655
Val	Val	Leu	Asp	Ala	Gln	Leu	Leu	Asp	Phe	Thr	His	Ala	Thr	Gly	Ser	2660	2665	2670
Glu	Gln	Val	Glu	Leu	Asp	Thr	Cys	Leu	Leu	Ala	Glu	Glu	Pro	Met	Gln	2675	2680	2685
Ser	Leu	His	Arg	Glu	His	Gly	Glu	Leu	Pro	Pro	Glu	Pro	Pro	Thr	Leu	2690	2695	2700
Pro	Gln	Pro	Glu	Leu	Cys	Ala	Val	Asp	Thr	Ala	Pro	Gly	Tyr	Val	Ala	2705	2710	2715
Gly	Ala	His	Gln	Phe	Gly	Leu	Ser	Gln	Asn	Ser	His	Leu	Val	Leu	Pro	2725	2730	2735
Leu	Asn	Gln	Ser	Asp	Val	Arg	Lys	Arg	Leu	Gln	Val	Gln	Leu	Ser	Ile	2740	2745	2750
Arg	Thr	Phe	Ala	Ser	Ser	Gly	Leu	Ile	Tyr	Tyr	Val	Ala	His	Gln	Asn	2755	2760	2765
Gln	Met	Asp	Tyr	Ala	Thr	Leu	Gln	Leu	Gln	Glu	Gly	Arg	Leu	His	Phe	2770	2775	2780
Met	Phe	Asp	Leu	Gly	Lys	Gly	Arg	Thr	Lys	Val	Ser	His	Pro	Ala	Leu	2785	2790	2795
Leu	Ser	Asp	Gly	Lys	Trp	His	Thr	Val	Lys	Thr	Glu	Tyr	Ile	Lys	Arg	2805	2810	2815
Lys	Ala	Phe	Met	Thr	Val	Asp	Gly	Gln	Glu	Ser	Pro	Ser	Val	Thr	Val	2820	2825	2830
Val	Gly	Asn	Ala	Thr	Thr	Leu	Asp	Val	Glu	Arg	Lys	Leu	Tyr	Leu	Gly	2835	2840	2845
Gly	Leu	Pro	Ser	His	Tyr	Arg	Ala	Arg	Asn	Ile	Gly	Thr	Ile	Thr	His	2850	2855	2860
Ser	Ile	Pro	Ala	Cys	Ile	Gly	Glu	Ile	Met	Val	Asn	Gly	Gln	Gln	Leu	2865	2870	2875
Asp	Lys	Asp	Arg	Pro	Leu	Ser	Ala	Ser	Ala	Val	Asp	Arg	Cys	Tyr	Val	2885	2890	2895
Val	Ala	Gln	Glu	Gly	Thr	Phe	Phe	Glu	Gly	Ser	Gly	Tyr	Ala	Ala	Leu	2900	2905	2910
Val	Lys	Glu	Gly	Tyr	Lys	Val	Arg	Leu	Asp	Leu	Asn	Ile	Thr	Leu	Glu	2915	2920	2925
Phe	Arg	Thr	Thr	Ser	Lys	Asn	Gly	Val	Leu	Leu	Gly	Ile	Ser	Ser	Ala	2930	2935	2940
Lys	Val	Asp	Ala	Ile	Gly	Leu	Glu	Ile	Val	Asp	Gly	Lys	Val	Leu	Phe	2945	2950	2955
His	Val	Asn	Asn	Gly	Ala	Gly	Arg	Ile	Thr	Ala	Thr	Tyr	Gln	Pro	Arg	2965	2970	2975
Ala	Ala	Arg	Ala	Leu	Cys	Asp	Gly	Lys	Trp	His	Thr	Leu	Gln	Ala	His			





Gln	Cys	Gln	Cys	Glu	His	Asn	Thr	Cys	Gly	Glu	Ser	Cys	Asn	Arg	Cys	
290						295					300					
Cys	Pro	Gly	Tyr	His	Gln	Gln	Pro	Trp	Arg	Pro	Gly	Thr	Val	Ser	Ser	
305					310					315					320	
Gly	Asn	Thr	Cys	Glu	Ala	Cys	Asn	Cys	His	Asn	Lys	Ala	Lys	Asp	Cys	
				325					330					335		
Tyr	Tyr	Asp	Glu	Ser	Val	Ala	Lys	Gln	Lys	Lys	Ser	Leu	Asn	Thr	Ala	
			340					345					350			
Gly	Gln	Phe	Arg	Gly	Gly	Gly	Val	Cys	Ile	Asn	Cys	Leu	Gln	Asn	Thr	
		355					360					365				
Met	Gly	Ile	Asn	Cys	Glu	Thr	Cys	Ile	Asp	Gly	Tyr	Tyr	Arg	Pro	His	
	370					375					380					
Lys	Val	Ser	Pro	Tyr	Glu	Asp	Glu	Pro	Cys	Arg	Pro	Cys	Asn	Cys	Asp	
385					390					395					400	
Pro	Val	Gly	Ser	Leu	Ser	Ser	Val	Cys	Ile	Lys	Asp	Asp	Leu	His	Ser	
				405					410					415		
Asp	Leu	His	Asn	Gly	Lys	Gln	Pro	Gly	Gln	Cys	Pro	Cys	Lys	Glu	Gly	
			420					425					430			
Tyr	Thr	Gly	Glu	Lys	Cys	Asp	Arg	Cys	Gln	Leu	Gly	Tyr	Lys	Asp	Tyr	
		435					440					445				
Pro	Thr	Cys	Val	Ser	Cys	Gly	Cys	Asn	Pro	Val	Gly	Ser	Ala	Ser	Asp	
	450					455					460					
Glu	Pro	Cys	Thr	Gly	Pro	Cys	Val	Cys	Lys	Glu	Asn	Val	Glu	Gly	Lys	
465					470					475					480	
Ala	Cys	Asp	Arg	Cys	Lys	Pro	Gly	Phe	Tyr	Asn	Leu	Lys	Glu	Lys	Asn	
				485					490					495		
Pro	Arg	Gly	Cys	Ser	Glu	Cys	Phe	Cys	Phe	Gly	Val	Ser	Asp	Val	Cys	
			500					505					510			
Ser	Ser	Leu	Ser	Trp	Pro	Val	Gly	Gln	Val	Asn	Ser	Met	Ser	Gly	Trp	
		515					520					525				
Leu	Val	Thr	Asp	Leu	Ile	Ser	Pro	Arg	Lys	Ile	Pro	Ser	Gln	Gln	Asp	
	530					535					540					
Ala	Leu	Gly	Gly	Arg	His	Gln	Val	Ser	Ile	Asn	Asn	Thr	Ala	Val	Met	
545					550					555					560	
Gln	Arg	Leu	Ala	Pro	Lys	Tyr	Tyr	Trp	Ala	Ala	Pro	Glu	Ala	Tyr	Leu	
				565					570					575		
Gly	Asn	Lys	Leu	Thr	Ala	Phe	Gly	Gly	Phe	Leu	Lys	Tyr	Thr	Val	Ser	
			580					585					590			
Tyr	Asp	Ile	Pro	Val	Glu	Thr	Val	Asp	Ser	Asn	Leu	Met	Ser	His	Ala	
		595					600					605				
Asp	Val	Ile	Ile	Lys	Gly	Asn	Gly	Leu	Thr	Leu	Ser	Thr	Gln	Ala	Glu	
	610					615					620					
Gly	Leu	Ser	Leu	Gln	Pro	Tyr	Glu	Glu	Tyr	Leu	Asn	Val	Val	Arg	Leu	
625					630					635					640	
Val	Pro	Glu	Asn	Phe	Gln	Asp	Phe	His	Ser	Lys	Arg	Gln	Ile	Asp	Arg	
				645					650					655		
Asp	Gln	Leu	Met	Thr	Val	Leu	Ala	Asn	Val	Thr	His	Leu	Leu	Ile	Arg	
			660					665					670			
Ala	Thr	Tyr	Asn	Ser	Ala	Lys	Met	Ala	Leu	Tyr	Arg	Leu	Glu	Ser	Val	
			675				680					685				
Ser	Leu	Asp	Ile	Ala	Ser	Ser	Asn	Ala	Ile	Asp	Leu	Val	Val	Ala	Ala	
	690					695					700					
Asp	Val	Glu	His	Cys	Glu	Cys	Pro	Gln	Gly	Tyr	Thr	Gly	Thr	Ser	Cys	
705					710					715					720	
Glu	Ser	Cys	Leu	Ser	Gly	Tyr	Tyr	Arg	Val	Asp	Gly	Ile	Leu	Phe	Gly	
				725					730					735		
Gly	Ile	Cys	Gln	Pro	Cys	Glu	Cys	His	Gly	His	Ala	Ala	Glu	Cys	Asn	
			740					745					750			
Val	His	Gly	Val	Cys	Ile	Ala	Cys	Ala	His	Asn	Thr	Thr	Gly	Val	His	
		755					760					765				
Cys	Glu	Gln	Cys	Leu	Pro	Gly	Phe	Tyr	Gly	Glu	Pro	Ser	Arg	Gly	Thr	

770	775	780
Pro Gly Asp Cys Gln	Pro Cys Ala Cys	Pro Leu Thr Ile Ala Ser Asn
785	790	795
Asn Phe Ser Pro Thr	Cys His Leu Asn Asp	Gly Asp Glu Val Val Cys
	805	810
Asp Trp Cys Ala Pro	Gly Tyr Ser Gly Ala Trp	Cys Glu Arg Cys Ala
	820	825
Asp Gly Tyr Tyr Gly	Asn Pro Thr Val Pro	Gly Glu Ser Cys Val Pro
	835	840
Cys Asp Cys Ser Gly	Asn Val Asp Pro Ser	Glu Ala Gly His Cys Asp
	850	855
Ser Val Thr Gly Glu	Cys Leu Lys Cys Leu	Gly Asn Thr Asp Gly Ala
	865	870
His Cys Glu Arg Cys	Ala Asp Gly Phe Tyr	Gly Asp Ala Val Thr Ala
	885	890
Lys Asn Cys Arg Ala	Cys Glu Cys His Val	Lys Gly Ser His Ser Ala
	900	905
Val Cys His Leu Glu	Thr Gly Leu Cys Asp	Cys Lys Pro Asn Val Thr
	915	920
Gly Gln Gln Cys Asp	Gln Cys Leu His Gly	Tyr Tyr Gly Leu Asp Ser
	930	935
Gly His Gly Cys Arg	Pro Cys Asn Cys Ser	Val Ala Gly Ser Val Ser
	945	950
Asp Gly Cys Thr Asp	Glu Gly Gln Cys His	Cys Val Pro Gly Val Ala
	965	970
Gly Lys Arg Cys Asp	Arg Cys Ala His Gly	Phe Tyr Ala Tyr Gln Asp
	980	985
Gly Ser Cys Thr Pro	Cys Asp Cys Pro His	Thr Gln Asn Thr Cys Asp
	995	1000
Pro Glu Thr Gly Glu	Cys Val Cys Pro Pro	His Thr Gln Gly Gly Lys
	1010	1015
Cys Glu Glu Cys Glu	Asp Gly His Trp Gly	Tyr Asp Ala Glu Val Gly
	1025	1030
Cys Gln Ala Cys Asn	Cys Ser Leu Val Gly	Ser Thr His His Arg Cys
	1045	1050
Asp Val Val Thr Gly	His Cys Gln Cys Lys	Ser Lys Phe Gly Gly Arg
	1060	1065
Ala Cys Asp Gln Cys	Ser Leu Gly Tyr Arg	Asp Phe Pro Asp Cys Val
	1075	1080
Pro Cys Asp Cys Asp	Leu Arg Gly Thr Ser	Gly Asp Ala Cys Asn Leu
	1090	1095
Glu Gln Gly Leu Cys	Gly Cys Val Glu Glu	Thr Gly Ala Cys Pro Cys
	1105	1110
Lys Glu Asn Val Phe	Gly Pro Gln Cys Asn	Glu Cys Arg Glu Gly Thr
	1125	1130
Phe Ala Leu Arg Ala	Asp Asn Pro Leu Gly	Cys Ser Pro Cys Phe Cys
	1140	1145
Ser Gly Leu Ser His	Leu Cys Ser Glu Leu	Glu Asp Tyr Val Arg Thr
	1155	1160
Pro Val Thr Leu Gly	Ser Asp Gln Pro Leu	Leu Arg Val Val Ser Gln
	1170	1175
Ser Asn Leu Arg Gly	Thr Thr Glu Gly Val	Tyr Tyr Gln Ala Pro Asp
	1185	1190
Phe Leu Leu Asp Ala	Ala Thr Val Arg Gln	His Ile Arg Ala Glu Pro
	1205	1210
Phe Tyr Trp Arg Leu	Pro Gln Gln Phe Gln	Gly Asp Gln Leu Met Ala
	1220	1225
Tyr Gly Gly Lys Leu	Lys Tyr Ser Val Ala	Phe Tyr Ser Leu Asp Gly
	1235	1240
Val Gly Thr Ser Asn	Phe Glu Pro Gln Val	Leu Ile Lys Gly Gly Arg
	1250	1255
		1260

Ile	Arg	Lys	Gln	Val	Ile	Tyr	Met	Asp	Ala	Pro	Ala	Pro	Glu	Asn	Gly	1265	1270	1275	1280
Val	Arg	Gln	Glu	Gln	Glu	Val	Ala	Met	Arg	Glu	Asn	Phe	Trp	Lys	Tyr	1285	1290	1295	
Phe	Asn	Ser	Val	Ser	Glu	Lys	Pro	Val	Thr	Arg	Glu	Asp	Phe	Met	Ser	1300	1305	1310	
Val	Leu	Ser	Asp	Ile	Glu	Tyr	Ile	Leu	Ile	Lys	Ala	Ser	Tyr	Gly	Gln	1315	1320	1325	
Gly	Leu	Gln	Gln	Ser	Arg	Ile	Ser	Asp	Ile	Ser	Val	Glu	Val	Gly	Arg	1330	1335	1340	
Lys	Ala	Glu	Lys	Leu	His	Pro	Glu	Glu	Glu	Val	Ala	Ser	Leu	Leu	Glu	1345	1350	1355	1360
Asn	Cys	Val	Cys	Pro	Pro	Gly	Thr	Val	Gly	Phe	Ser	Cys	Gln	Asp	Cys	1365	1370	1375	
Ala	Pro	Gly	Tyr	His	Arg	Gly	Lys	Leu	Pro	Ala	Gly	Ser	Asp	Arg	Gly	1380	1385	1390	
Pro	Arg	Pro	Leu	Val	Ala	Pro	Cys	Val	Pro	Cys	Ser	Cys	Asn	Asn	His	1395	1400	1405	
Ser	Asp	Thr	Cys	Asp	Pro	Asn	Thr	Gly	Lys	Cys	Leu	Asn	Cys	Gly	Asp	1410	1415	1420	
Asn	Thr	Ala	Gly	Asp	His	Cys	Asp	Val	Cys	Thr	Ser	Gly	Tyr	Tyr	Gly	1425	1430	1435	1440
Lys	Val	Thr	Gly	Ser	Ala	Ser	Asp	Cys	Ala	Leu	Cys	Ala	Cys	Pro	His	1445	1450	1455	
Ser	Pro	Pro	Ala	Ser	Phe	Ser	Pro	Thr	Cys	Val	Leu	Glu	Gly	Asp	His	1460	1465	1470	
Asp	Phe	Arg	Cys	Asp	Ala	Cys	Leu	Leu	Gly	Tyr	Glu	Gly	Lys	His	Cys	1475	1480	1485	
Glu	Arg	Cys	Ser	Ser	Ser	Tyr	Tyr	Gly	Asn	Pro	Gln	Thr	Pro	Gly	Gly	1490	1495	1500	
Ser	Cys	Gln	Lys	Cys	Asp	Cys	Asn	Arg	His	Gly	Ser	Val	His	Gly	Asp	1505	1510	1515	1520
Cys	Asp	Arg	Thr	Ser	Gly	Gln	Cys	Val	Cys	Arg	Leu	Gly	Ala	Ser	Gly	1525	1530	1535	
Leu	Arg	Cys	Asp	Glu	Cys	Glu	Pro	Arg	His	Ile	Leu	Met	Glu	Thr	Asp	1540	1545	1550	
Cys	Val	Ser	Cys	Asp	Asp	Glu	Cys	Val	Gly	Val	Leu	Leu	Asn	Asp	Leu	1555	1560	1565	
Asp	Glu	Ile	Gly	Asp	Ala	Val	Leu	Ser	Leu	Asn	Leu	Thr	Gly	Ile	Ile	1570	1575	1580	
Pro	Val	Pro	Tyr	Gly	Ile	Leu	Ser	Asn	Leu	Glu	Asn	Thr	Thr	Lys	Tyr	1585	1590	1595	1600
Leu	Gln	Glu	Ser	Leu	Leu	Lys	Glu	Asn	Met	Gln	Lys	Asp	Leu	Gly	Lys	1605	1610	1615	
Ile	Lys	Leu	Glu	Gly	Val	Ala	Glu	Glu	Thr	Asp	Asn	Leu	Gln	Lys	Lys	1620	1625	1630	
Leu	Thr	Arg	Met	Leu	Ala	Ser	Thr	Gln	Lys	Val	Asn	Arg	Ala	Thr	Glu	1635	1640	1645	
Arg	Ile	Phe	Lys	Glu	Ser	Gln	Asp	Leu	Ala	Val	Ala	Ile	Glu	Arg	Leu	1650	1655	1660	
Gln	Met	Ser	Ile	Thr	Glu	Ile	Met	Glu	Lys	Thr	Thr	Leu	Asn	Gln	Thr	1665	1670	1675	1680
Leu	Asp	Glu	Asp	Phe	Leu	Leu	Pro	Asn	Ser	Thr	Leu	Gln	Asn	Met	Gln	1685	1690	1695	
Gln	Asn	Gly	Thr	Ser	Leu	Leu	Glu	Ile	Met	Gln	Ile	Arg	Asp	Phe	Thr	1700	1705	1710	
Gln	Leu	His	Gln	Asn	Ala	Thr	Leu	Glu	Leu	Lys	Ala	Ala	Glu	Asp	Leu	1715	1720	1725	
Leu	Ser	Gln	Ile	Gln	Glu	Asn	Tyr	Gln	Lys	Pro	Leu	Glu	Glu	Leu	Glu	1730	1735	1740	
Val	Leu	Lys	Glu	Ala	Ala	Ser	His	Val	Leu	Ser	Lys	His	Asn	Asn	Glu				

1745		1750		1755		1760
Leu Lys Ala Ala Glu	Ala Leu Val Arg Glu	Ala Glu Ala Lys Met Glu				
	1765	1770		1775		
Glu Ser Asn His Leu	Leu Leu Met Val Asn	Ala Asn Leu Arg Glu Phe				
	1780	1785		1790		
Ser Asp Lys Lys Leu	His Val Gln Glu Glu Gln	Asn Leu Thr Ser Glu				
	1795	1800		1805		
Leu Ile Val Gln Gly Arg	Gly Leu Ile Asp Ala Ala	Ala Ala Gln Thr				
	1810	1815		1820		
Asp Ala Val Gln Asp Ala	Leu Glu His Leu Glu Asp	His Gln Asp Lys				
	1825	1830		1835		1840
Leu Leu Leu Trp Ser Ala	Lys Ile Arg His His Ile	Asp Asp Leu Val				
	1845	1850		1855		
Met His Met Ser Gln Arg	Asn Ala Val Asp Leu Val	Tyr Arg Ala Glu				
	1860	1865		1870		
Asp His Ala Thr Glu Phe	Gln Arg Leu Ala Asp Val	Leu Tyr Ser Gly				
	1875	1880		1885		
Leu Glu Asn Ile Arg Asn	Val Ser Leu Asn Ala Thr	Ser Ala Ala Tyr				
	1890	1895		1900		
Val His Tyr Asn Ile Gln	Ser Leu Ile Glu Glu Ser	Glu Glu Leu Ala				
	1905	1910		1915		1920
Arg Asp Ala His Arg Thr	Val Thr Glu Thr Ser Leu	Leu Ser Glu Ser				
	1925	1930		1935		
Leu Val Ser Asn Gly Lys	Ala Ala Val Gln Arg Ser	Ser Arg Phe Leu				
	1940	1945		1950		
Lys Glu Gly Asn Asn Leu	Ser Arg Lys Leu Pro Gly	Ile Ala Leu Glu				
	1955	1960		1965		
Leu Ser Glu Leu Arg Asn	Lys Thr Asn Arg Phe Gln	Glu Asn Ala Val				
	1970	1975		1980		
Glu Ile Thr Arg Gln Thr	Asn Glu Ser Leu Leu Ile	Leu Arg Ala Ile				
	1985	1990		1995		2000
Pro Glu Gly Ile Arg Asp	Lys Gly Ala Lys Thr Lys	Glu Leu Ala Thr				
	2005	2010		2015		
Ser Ala Ser Gln Ser Ala	Val Ser Thr Leu Arg Asp	Val Ala Gly Leu				
	2020	2025		2030		
Ser Gln Glu Leu Leu Asn	Thr Ser Ala Ser Leu Ser	Arg Val Asn Thr				
	2035	2040		2045		
Thr Leu Arg Glu Thr His	Gln Leu Leu Gln Asp Ser	Thr Met Ala Thr				
	2050	2055		2060		
Leu Leu Ala Gly Arg Lys	Val Lys Asp Val Glu Ile	Gln Ala Asn Leu				
	2065	2070		2075		2080
Leu Phe Asp Arg Leu Lys	Pro Leu Lys Met Leu Glu	Glu Asn Leu Ser				
	2085	2090		2095		
Arg Asn Leu Ser Glu Ile	Lys Leu Leu Ile Ser Gln	Ala Arg Lys Gln				
	2100	2105		2110		
Ala Ala Ser Ile Lys Val	Ala Val Ser Ala Asp Arg	Asp Cys Ile Arg				
	2115	2120		2125		
Ala Tyr Gln Pro Gln Ile	Ser Ser Thr Asn Tyr Asn	Thr Leu Thr Leu				
	2130	2135		2140		
Asn Val Lys Thr Gln Glu	Pro Asp Asn Leu Leu Phe	Tyr Leu Gly Ser				
	2145	2150		2155		2160
Ser Thr Ala Ser Asp Phe	Leu Ala Val Glu Met Arg	Arg Gly Arg Val				
	2165	2170		2175		
Ala Phe Leu Trp Asp Leu	Gly Ser Gly Ser Thr Arg	Leu Glu Phe Pro				
	2180	2185		2190		
Asp Phe Pro Ile Asp Asp	Asn Arg Trp His Ser Ile	His Val Ala Arg				
	2195	2200		2205		
Phe Gly Asn Ile Gly Ser	Leu Ser Val Lys Glu Met	Ser Ser Asn Gln				
	2210	2215		2220		
Lys Ser Pro Thr Lys Thr	Ser Lys Ser Pro Gly Thr	Ala Asn Val Leu				
	2225	2230		2235		2240

Asp	Val	Asn	Asn	Ser	Thr	Leu	Met	Phe	Val	Gly	Gly	Leu	Gly	Gly	Gln	
				2245					2250						2255	
Ile	Lys	Lys	Ser	Pro	Ala	Val	Lys	Val	Thr	His	Phe	Lys	Gly	Cys	Leu	
			2260					2265						2270		
Gly	Glu	Ala	Phe	Leu	Asn	Gly	Lys	Ser	Ile	Gly	Leu	Trp	Asn	Tyr	Ile	
		2275					2280					2285				
Glu	Arg	Glu	Gly	Lys	Cys	Arg	Gly	Cys	Phe	Gly	Ser	Ser	Gln	Asn	Glu	
	2290					2295					2300					
Asp	Pro	Ser	Phe	His	Phe	Asp	Gly	Ser	Gly	Tyr	Ser	Val	Val	Glu	Lys	
2305					2310					2315					2320	
Ser	Leu	Pro	Ala	Thr	Val	Thr	Gln	Ile	Ile	Met	Leu	Phe	Asn	Thr	Phe	
			2325						2330					2335		
Ser	Pro	Asn	Gly	Leu	Leu	Leu	Tyr	Leu	Gly	Ser	Tyr	Gly	Thr	Lys	Asp	
		2340						2345					2350			
Phe	Leu	Ser	Ile	Glu	Leu	Phe	Arg	Gly	Arg	Val	Lys	Val	Met	Thr	Asp	
	2355					2360						2365				
Leu	Gly	Ser	Gly	Pro	Ile	Thr	Leu	Leu	Thr	Asp	Arg	Arg	Tyr	Asn	Asn	
	2370					2375					2380					
Gly	Thr	Trp	Tyr	Lys	Ile	Ala	Phe	Gln	Arg	Asn	Arg	Lys	Gln	Gly	Val	
2385				2390					2395						2400	
Leu	Ala	Val	Ile	Asp	Ala	Tyr	Asn	Thr	Ser	Asn	Lys	Glu	Thr	Lys	Gln	
			2405					2410					2415			
Gly	Glu	Thr	Pro	Gly	Ala	Ser	Ser	Asp	Leu	Asn	Arg	Leu	Asp	Lys	Asp	
		2420						2425				2430				
Pro	Ile	Tyr	Val	Gly	Gly	Leu	Pro	Arg	Ser	Arg	Val	Val	Arg	Arg	Gly	
	2435						2440				2445					
Val	Thr	Thr	Lys	Ser	Phe	Val	Gly	Cys	Ile	Lys	Asn	Leu	Glu	Ile	Ser	
	2450				2455					2460						
Arg	Ser	Thr	Phe	Asp	Leu	Arg	Asn	Ser	Tyr	Gly	Val	Arg	Lys	Gly		
2465				2470					2475					2480		
Cys	Leu	Leu	Glu	Pro	Ile	Arg	Ser	Val	Ser	Phe	Leu	Lys	Gly	Gly	Tyr	
			2485					2490					2495			
Ile	Glu	Leu	Pro	Pro	Lys	Ser	Leu	Ser	Pro	Glu	Ser	Glu	Trp	Leu	Val	
			2500					2505				2510				
Thr	Phe	Ala	Thr	Thr	Asn	Ser	Ser	Gly	Ile	Ile	Leu	Ala	Ala	Leu	Gly	
	2515				2520						2525					
Gly	Asp	Val	Glu	Lys	Arg	Gly	Asp	Arg	Glu	Glu	Ala	His	Val	Pro	Phe	
	2530				2535				2540							
Phe	Ser	Val	Met	Leu	Ile	Gly	Gly	Asn	Ile	Glu	Val	His	Val	Asn	Pro	
2545				2550					2555					2560		
Gly	Asp	Gly	Thr	Gly	Leu	Arg	Lys	Ala	Leu	Leu	His	Ala	Pro	Thr	Gly	
			2565					2570				2575				
Thr	Cys	Ser	Asp	Gly	Gln	Ala	His	Ser	Ile	Ser	Leu	Val	Arg	Asn	Arg	
		2580						2585				2590				
Arg	Ile	Ile	Thr	Val	Gln	Leu	Asp	Glu	Asn	Asn	Pro	Val	Glu	Met	Lys	
	2595						2600					2605				
Leu	Gly	Thr	Leu	Val	Glu	Ser	Arg	Thr	Ile	Asn	Val	Ser	Asn	Leu	Tyr	
	2610				2615					2620						
Val	Gly	Gly	Ile	Pro	Glu	Gly	Glu	Gly	Thr	Ser	Leu	Leu	Thr	Met	Arg	
2625				2630					2635					2640		
Arg	Ser	Phe	His	Gly	Cys	Ile	Lys	Asn	Leu	Ile	Phe	Asn	Leu	Glu	Leu	
			2645					2650					2655			
Leu	Asp	Phe	Asn	Ser	Ala	Val	Gly	His	Glu	Gln	Val	Asp	Leu	Asp	Thr	
	2660						2665					2670				
Cys	Trp	Leu	Ser	Glu	Arg	Pro	Lys	Leu	Ala	Pro	Asp	Ala	Glu	Asp	Ser	
	2675						2680					2685				
Lys	Leu	Leu	Arg	Glu	Pro	Arg	Ala	Phe	Pro	Glu	Gln	Cys	Val	Val	Asp	
	2690					2695					2700					
Ala	Ala	Leu	Glu	Tyr	Val	Pro	Gly	Ala	His	Gln	Phe	Gly	Leu	Thr	Gln	
2705					2710					2715					2720	
Asn	Ser	His	Phe	Ile	Leu	Pro	Phe	Asn	Gln	Ser	Ala	Val	Arg	Lys	Lys	



Gly	Ser	Cys	Tyr	Pro	Ala	Thr	Gly	Asp	Leu	Leu	Ile	Gly	Arg	Ala	Gln
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Lys	Leu	Ser	Val	Thr	Ser	Thr	Cys	Gly	Leu	His	Lys	Pro	Glu	Pro	Tyr
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Cys	Ile	Val	Ser	His	Leu	Gln	Glu	Asp	Lys	Lys	Cys	Phe	Ile	Cys	Asn
65					70					75					80
Ser	Gln	Asp	Pro	Tyr	His	Glu	Thr	Leu	Asn	Pro	Asp	Ser	His	Leu	Ile
				85					90					95	
Glu	Asn	Val	Val	Thr	Thr	Phe	Ala	Pro	Asn	Arg	Leu	Lys	Ile	Trp	Trp
			100					105					110		
Gln	Ser	Glu	Asn	Gly	Val	Glu	Asn	Val	Thr	Ile	Gln	Leu	Asp	Leu	Glu
			115				120					125			
Ala	Glu	Phe	His	Phe	Thr	His	Leu	Ile	Met	Thr	Phe	Lys	Thr	Phe	Arg
	130					135					140				
Pro	Ala	Ala	Met	Leu	Ile	Glu	Arg	Ser	Ser	Asp	Phe	Gly	Lys	Thr	Trp
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Gly	Val	Tyr	Arg	Tyr	Phe	Ala	Tyr	Asp	Cys	Glu	Ala	Ser	Phe	Pro	Gly
				165					170					175	
Ile	Ser	Thr	Gly	Pro	Met	Lys	Lys	Val	Asp	Asp	Ile	Ile	Cys	Asp	Ser
			180					185					190		
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		195					200					205			
Ala	Leu	Asp	Pro	Ala	Phe	Lys	Ile	Glu	Asp	Pro	Tyr	Ser	Pro	Arg	Ile
	210					215					220				
Gln	Asn	Leu	Leu	Lys	Ile	Thr	Asn	Leu	Arg	Ile	Lys	Phe	Val	Lys	Leu
225					230					235					240
His	Thr	Leu	Gly	Asp	Asn	Leu	Leu	Asp	Ser	Arg	Met	Glu	Ile	Arg	Glu
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Lys	Tyr	Tyr	Tyr	Ala	Val	Tyr	Asp	Met	Val	Val	Arg	Gly	Asn	Cys	Phe
			260					265					270		
Cys	Tyr	Gly	His	Ala	Ser	Glu	Cys	Ala	Pro	Val	Asp	Gly	Phe	Asn	Glu
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Glu	Val	Glu	Gly	Met	Val	His	Gly	His	Cys	Met	Cys	Arg	His	Asn	Thr
	290					295					300				
Lys	Gly	Leu	Asn	Cys	Glu	Leu	Cys	Met	Asp	Phe	Tyr	His	Asp	Leu	Pro
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Trp	Arg	Pro	Ala	Glu	Gly	Arg	Asn	Ser	Asn	Ala	Cys	Lys	Lys	Cys	Asn
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Ala	Thr	Gly	Asn	Val	Ser	Gly	Gly	Val	Cys	Asp	Asp	Cys	Gln	His	Asn
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Thr	Met	Gly	Arg	Asn	Cys	Glu	Gln	Cys	Lys	Pro	Phe	Tyr	Tyr	Gln	His
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Pro	Glu	Arg	Asp	Ile	Arg	Asp	Pro	Asn	Phe	Cys	Glu	Arg	Cys	Thr	Cys
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	450					455					460				
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His	Trp	Gly	Leu	Ser	Asn	Asp	Leu	Asp	Gly	Cys	Arg	Pro	Cys	Asp	Cys
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Cys 530	Ser 530	Cys 530	Arg 530	Pro 530	His 530	Met 535	Ile 535	Gly 535	Arg 535	Gln 535	Cys 540	Asn 540	Glu 540	Val 540	Glu 540			
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Glu 595	Gly 595	Ala 595	Tyr 595	Leu 595	Glu 595	Phe 600	Phe 600	Ile 600	Asp 600	Asn 605	Ile 605	Pro 605	Tyr 605	Ser 605	Met 605			
Glu 610	Tyr 610	Asp 610	Ile 610	Leu 615	Ile 615	Arg 615	Tyr 615	Glu 615	Pro 615	Gln 620	Leu 620	Pro 620	Asp 620	His 620	Trp 620			
Glu 625	Lys 625	Ala 625	Val 625	Ile 630	Thr 630	Val 630	Gln 635	Arg 635	Pro 635	Gly 635	Arg 635	Ile 635	Pro 635	Thr 640	Ser 640			
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Glu 675	Lys 675	Gly 675	Thr 675	Asn 675	Tyr 675	Thr 680	Val 680	Arg 680	Leu 680	Glu 685	Leu 685	Pro 685	Gln 685	Tyr 685	Thr 685			
Ser 690	Ser 690	Asp 690	Ser 690	Asp 690	Val 695	Glu 695	Ser 695	Pro 695	Tyr 695	Thr 700	Leu 700	Ile 700	Asp 700	Ser 700	Leu 700			
Val 705	Leu 705	Met 705	Pro 705	Tyr 710	Cys 710	Lys 710	Ser 710	Leu 710	Asp 715	Ile 715	Phe 715	Thr 715	Val 715	Gly 720	Gly 720			
Ser 725	Gly 725	Asp 725	Gly 725	Val 725	Val 725	Thr 725	Asn 730	Ser 730	Ala 730	Trp 730	Glu 730	Thr 730	Phe 730	Gln 735	Arg 735			
Tyr 740	Arg 740	Cys 740	Leu 740	Glu 740	Asn 740	Ser 745	Arg 745	Ser 745	Val 745	Val 745	Lys 745	Thr 745	Pro 745	Met 745	Thr 745			
Asp 755	Val 755	Cys 755	Arg 755	Asn 755	Ile 755	Ile 755	Phe 760	Ser 760	Ile 760	Ser 760	Ala 765	Leu 765	Leu 765	His 765	Gln 765			
Thr 770	Gly 770	Leu 770	Ala 770	Cys 770	Glu 770	Cys 775	Asp 775	Pro 775	Gln 775	Gly 775	Ser 780	Leu 780	Ser 780	Ser 780	Val 780			
Cys 785	Asp 785	Pro 785	Asn 785	Gly 785	Gly 790	Gln 790	Cys 790	Gln 790	Cys 795	Arg 795	Pro 795	Asn 795	Val 795	Val 795	Gly 800			
Arg 805	Thr 805	Cys 805	Asn 805	Arg 805	Cys 805	Ala 805	Pro 810	Gly 810	Thr 810	Phe 810	Gly 810	Phe 810	Gly 810	Pro 815	Ser 815			
Gly 820	Cys 820	Lys 820	Pro 820	Cys 820	Glu 820	Cys 820	His 825	Leu 825	Gln 825	Gly 825	Ser 825	Val 825	Asn 825	Ala 825	Phe 825			
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Gly 885	Glu 885	Cys 885	Leu 885	Asn 885	Cys 885	Gln 885	Asp 885	Tyr 885	Thr 885	Met 885	Gly 885	His 885	Asn 885	Cys 885	Glu 885			
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His 905	Cys 905																	

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Asn	Gly	Ser	Asp	Cys	Gln	Cys	Asp	Lys	Ala	Thr	Gly	Gln	Cys	Leu	Cys		
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Trp	Gln	Leu	Ala	Ser	Gly	Thr	Gly	Cys	Asp	Pro	Cys	Asn	Cys	Asn	Ala		
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						1155									1165		
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Leu	Trp	Asp	Val	Ile	Ile	Ala	Glu	Leu	Thr	Asn	Arg	Thr	His	Arg	Phe		
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Arg	Glu	Thr	Val	Asp	Ser	Val	Glu	Arg	Lys	Val	Ser	Glu	Ile	Lys	Asp		
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Ile	Leu	Ala	Gln	Ser	Pro	Ala	Ala	Glu	Pro	Leu	Lys	Asn	Ile	Gly	Asn		
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Thr	Lys	Glu	Lys	Met	Asp	Lys	Ser	Asn	Glu	Glu	Leu	Arg	Asn	Leu	Ile		

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Lys Gln Ile Arg Asn Phe Leu Thr Gln Asp Ser Ala Asp Leu Asp Ser				
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Ile Glu Ala Val Ala Asn Glu Val Leu Lys Met Glu Met Pro Ser Thr				
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Pro Gln Gln Leu Gln Asn Leu Thr Glu Asp Ile Arg Glu Arg Val Glu				
	1540		1545	1550
Ser Leu Ser Gln Val Glu Val Ile Leu Gln His Ser Ala Ala Asp Ile				
	1555		1560	1565
Ala Arg Ala Glu Met Leu Leu Glu Glu Ala Lys Arg Ala Ser Lys Ser				
	1570		1575	1580
Ala Thr Asp Val Lys Val Thr Ala Asp Met Val Lys Glu Ala Leu Glu				
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Glu Ala Glu Lys Ala Gln Val Ala Ala Glu Lys Ala Ile Lys Gln Ala				
	1605		1610	1615
Asp Glu Asp Ile Gln Gly Thr Gln Asn Leu Leu Thr Ser Ile Glu Ser				
	1620		1625	1630
Glu Thr Ala Ala Ser Glu Glu Thr Leu Phe Asn Ala Ser Gln Arg Ile				
	1635		1640	1645
Ser Glu Leu Glu Arg Asn Val Glu Glu Leu Lys Arg Lys Ala Ala Gln				
	1650		1655	1660
Asn Ser Gly Glu Ala Glu Tyr Ile Glu Lys Val Val Tyr Thr Val Lys				
1665		1670		1675
Gln Ser Ala Glu Asp Val Lys Lys Thr Leu Asp Gly Glu Leu Asp Glu				
	1685		1690	1695
Lys Tyr Lys Lys Val Glu Asn Leu Ile Ala Lys Lys Thr Glu Glu Ser				
	1700		1705	1710
Ala Asp Ala Arg Arg Lys Ala Glu Met Leu Gln Asn Glu Ala Lys Thr				
	1715		1720	1725
Leu Leu Ala Gln Ala Asn Ser Lys Leu Gln Leu Leu Lys Asp Leu Glu				
	1730		1735	1740
Arg Lys Tyr Glu Asp Asn Gln Arg Tyr Leu Glu Asp Lys Ala Gln Glu				
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Cys Ile Val Ser His Leu Gln Glu Asp Lys Lys Cys Phe Ile Cys Asp
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Ser Arg Asp Pro Tyr His Glu Thr Leu Asn Pro Asp Ser His Leu Ile
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Gly	Val	Tyr	Arg	Tyr	Phe	Ala	Tyr	Asp	Cys	Glu	Ser	Ser	Phe	Pro	Gly
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Ala	Leu	Asp	Pro	Ala	Phe	Lys	Ile	Glu	Asp	Pro	Tyr	Ser	Pro	Arg	Ile
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Gln	Asn	Leu	Leu	Lys	Ile	Thr	Asn	Leu	Arg	Ile	Lys	Phe	Val	Lys	Leu
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His	Thr	Leu	Gly	Asp	Asn	Leu	Leu	Asp	Ser	Arg	Met	Glu	Ile	Arg	Glu
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Lys	Tyr	Tyr	Tyr	Ala	Val	Tyr	Asp	Met	Val	Val	Arg	Gly	Asn	Cys	Phe
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Cys	Tyr	Gly	His	Ala	Ser	Glu	Cys	Ala	Pro	Val	Asp	Gly	Val	Asn	Glu
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Trp	Arg	Pro	Ala	Glu	Gly	Arg	Asn	Ser	Asn	Ala	Cys	Lys	Lys	Cys	Asn
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Phe	Ser	Val	Gly	Leu	Ile	Ala	Gly	Gln	Cys	Arg	Cys	Lys	Leu	His	Val
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Cys	Lys	Arg	Leu	Val	Thr	Gly	Gln	Arg	Cys	Asp	Gln	Cys	Leu	Pro	Gln
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Asp	Leu	Gly	Gly	Ala	Leu	Asn	Asn	Ser	Cys	Ser	Glu	Asp	Ser	Gly	Gln
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Cys	Ser	Cys	Leu	Pro	His	Met	Ile	Gly	Arg	Gln	Cys	Asn	Glu	Val	Glu
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Ser	Gly	Tyr	Tyr	Phe	Thr	Thr	Leu	Asp	His	Tyr	Ile	Tyr	Glu	Ala	Glu
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Glu	Ala	Asn	Leu	Gly	Pro	Gly	Val	Val	Val	Val	Glu	Arg	Gln	Tyr	Ile
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Gln	Asp	Arg	Ile	Pro	Ser	Trp	Thr	Gly	Pro	Gly	Phe	Val	Arg	Val	Pro

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Ser	Arg	Cys	Gly	Asn	Thr	Val	Pro	Asp	Asp	Asp	Asn	Gln	Val	Val	Ser
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Leu	Ser	Pro	Gly	Ser	Arg	Tyr	Val	Val	Leu	Pro	Arg	Pro	Val	Cys	Phe
			660					665					670		
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		675					680					685			
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Ser	Gly	Asp	Gly	Glu	Val	Thr	Asn	Ser	Ala	Trp	Glu	Thr	Phe	Gln	Arg
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Ser Lys Leu Glu Arg Asn Val Glu Glu Leu Lys Arg Lys Ala Ala Gln		
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Asn Val Val Thr Ser Phe Ala Pro Gln Arg Arg Thr Ala Trp Trp Gln
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Ser Glu Asn Gly Val Pro Met Val Thr Ile Gln Leu Asp Leu Glu Ala
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Glu Phe His Phe Thr His Leu Ile Met Thr Phe Lys Thr Phe Arg Pro
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	435						440					445			
Cys	Gln	Gln	Cys	Arg	Asp	Gly	Phe	Phe	Gly	Leu	Ser	Ile	Ser	Asp	Arg
	450					455					460				
Leu	Gly	Cys	Arg	Arg	Cys	Gln	Cys	Asn	Ala	Arg	Gly	Thr	Val	Pro	Gly
465					470					475					480
Ser	Thr	Pro	Cys	Asp	Pro	Asn	Ser	Gly	Ser	Cys	Tyr	Cys	Lys	Arg	Leu
				485					490					495	
Val	Thr	Gly	Arg	Gly	Cys	Asp	Arg	Cys	Leu	Pro	Gly	His	Trp	Gly	Leu
			500					505					510		
Ser	His	Asp	Leu	Leu	Gly	Cys	Arg	Pro	Cys	Asp	Cys	Asp	Val	Gly	Gly
		515					520					525			
Ala	Leu	Asp	Pro	Gln	Cys	Asp	Glu	Gly	Thr	Gly	Gln	Cys	His	Cys	Arg
	530					535					540				
Gln	His	Met	Val	Gly	Arg	Arg	Cys	Glu	Gln	Val	Gln	Pro	Gly	Tyr	Phe
545					550					555					560
Arg	Pro	Phe	Leu	Asp	His	Leu	Ile	Trp	Glu	Ala	Glu	Asp	Thr	Arg	Gly
				565					570					575	
Gln	Val	Leu	Asp	Val	Val	Glu	Arg	Leu	Val	Thr	Pro	Gly	Glu	Thr	Pro
			580					585					590		
Ser	Trp	Thr	Gly	Ser	Gly	Phe	Val	Arg	Leu	Gln	Glu	Gly	Gln	Thr	Leu
			595				600					605			
Glu	Phe	Leu	Val	Ala	Ser	Val	Pro	Lys	Ala	Met	Asp	Tyr	Asp	Leu	Leu
	610					615					620				
Leu	Arg	Leu	Glu	Pro	Gln	Val	Pro	Glu	Gln	Trp	Ala	Glu	Leu	Glu	Leu
625					630					635					640
Ile	Val	Gln	Arg	Pro	Gly	Pro	Val	Pro	Ala	His	Ser	Leu	Cys	Gly	His
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Leu	Val	Pro	Lys	Asp	Asp	Arg	Ile	Gln	Gly	Thr	Leu	Gln	Pro	His	Ala
			660					665					670		
Arg	Tyr	Leu	Ile	Phe	Pro	Asn	Pro	Val	Cys	Leu	Glu	Pro	Gly	Ile	Ser
		675					680					685			
Tyr	Lys	Leu	His	Leu	Lys	Leu	Val	Arg	Thr	Gly	Gly	Ser	Ala	Gln	Pro

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Glu Thr Pro Tyr Ser	Gly Pro Gly Leu Leu Ile Asp Ser Leu Val Leu			
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Leu Pro Arg Val Leu	Val Leu Glu Met Phe Ser Gly Gly Asp Ala Ala			
	725	730	735	
Ala Leu Glu Arg Gln Ala Thr Phe Glu Arg Tyr Gln Cys His Glu Glu				
	740	745	750	
Gly Leu Val Pro Ser Lys Thr Ser Pro Ser Glu Ala Cys Ala Pro Leu				
	755	760	765	
Leu Ile Ser Leu Ser Thr Leu Ile Tyr Asn Gly Ala Leu Pro Cys Gln				
	770	775	780	
Cys Asn Pro Gln Gly Ser Leu Ser Ser Glu Cys Asn Pro His Gly Gly				
785	790	795	800	
Gln Cys Leu Cys Lys Pro Gly Val Val Gly Arg Arg Cys Asp Leu Cys				
	805	810	815	
Ala Pro Gly Tyr Tyr Gly Phe Gly Pro Thr Gly Cys Gln Ala Cys Gln				
	820	825	830	
Cys Ser His Glu Gly Ala Leu Ser Ser Leu Cys Glu Lys Thr Ser Gly				
	835	840	845	
Gln Cys Leu Cys Arg Thr Gly Ala Phe Gly Leu Arg Cys Asp Arg Cys				
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Gln Arg Gly Gln Trp Gly Phe Pro Ser Cys Arg Pro Cys Val Cys Asn				
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Gly His Ala Asp Glu Cys Asn Thr His Thr Gly Ala Cys Leu Gly Cys				
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Arg Asp His Thr Gly Gly Glu His Cys Glu Arg Cys Ile Ala Gly Phe				
	900	905	910	
His Arg Asp Pro Arg Leu Pro Tyr Gly Gly Gln Cys Arg Pro Cys Pro				
	915	920	925	
Cys Pro Glu Gly Pro Gly Ser Gln Arg His Phe Ala Thr Ser Cys His				
	930	935	940	
Gln Asp Glu Tyr Ser Gln Gln Ile Val Cys His Cys Arg Ala Gly Tyr				
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Thr Gly Leu Arg Cys Glu Ala Cys Ala Pro Gly His Phe Gly Asp Pro				
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Ser Arg Pro Gly Gly Arg Cys Gln Leu Cys Glu Cys Ser Gly Asn Ile				
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Asp Pro Met Asp Pro Asp Ala Cys Asp Pro His Thr Gly Gln Cys Leu				
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Arg Cys Leu His His Thr Glu Gly Pro His Cys Ala His Cys Lys Pro				
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Gly Phe His Gly Gln Ala Ala Arg Gln Ser Cys His Arg Cys Thr Cys				
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Asn Leu Leu Gly Thr Asn Pro Gln Gln Cys Pro Ser Pro Asp Gln Cys				
	1045	1050	1055	
His Cys Asp Pro Ser Ser Gly Gln Cys Pro Cys Leu Pro Asn Val Gln				
	1060	1065	1070	
Gly Pro Ser Cys Asp Arg Cys Ala Pro Asn Phe Trp Asn Leu Thr Ser				
	1075	1080	1085	
Gly His Gly Cys Gln Pro Cys Ala Cys His Pro Ser Arg Ala Arg Gly				
	1090	1095	1100	
Pro Thr Cys Asn Glu Phe Thr Gly Gln Cys His Cys Arg Ala Gly Phe				
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Gly Gly Arg Thr Cys Ser Glu Cys Gln Glu Leu His Trp Gly Asp Pro				
	1125	1130	1135	
Gly Leu Gln Cys His Ala Cys Asp Cys Asp Ser Arg Gly Ile Asp Thr				
	1140	1145	1150	
Pro Gln Cys His Arg Phe Thr Gly His Cys Ser Cys Arg Pro Gly Val				
	1155	1160	1165	
Ser Gly Val Arg Cys Asp Gln Cys Ala Arg Gly Phe Ser Gly Ile Phe				
1170	1175	1180		

Pro	Ala	Cys	His	Pro	Cys	His	Ala	Cys	Phe	Gly	Asp	Trp	Asp	Arg	Val	1185	1190	1195	1200
Val	Gln	Asp	Leu	Ala	Ala	Arg	Thr	Gln	Arg	Leu	Glu	Gln	Arg	Ala	Gln		1205	1210	1215
Glu	Leu	Gln	Gln	Thr	Gly	Val	Leu	Gly	Ala	Phe	Glu	Ser	Ser	Phe	Trp		1220	1225	1230
His	Met	Gln	Glu	Lys	Leu	Gly	Ile	Val	Gln	Gly	Ile	Val	Gly	Ala	Arg	1235	1240	1245	
Asn	Thr	Ser	Ala	Ala	Ser	Thr	Ala	Gln	Leu	Val	Glu	Ala	Thr	Glu	Glu	1250	1255	1260	
Leu	Arg	Arg	Glu	Ile	Gly	Glu	Ala	Thr	Glu	His	Leu	Thr	Gln	Leu	Glu	1265	1270	1275	1280
Ala	Asp	Leu	Thr	Asp	Val	Gln	Asp	Glu	Asn	Phe	Asn	Ala	Asn	His	Ala		1285	1290	1295
Leu	Ser	Gly	Leu	Glu	Arg	Asp	Arg	Leu	Ala	Leu	Asn	Leu	Thr	Leu	Arg		1300	1305	1310
Gln	Leu	Asp	Gln	His	Leu	Asp	Leu	Leu	Lys	His	Ser	Asn	Phe	Leu	Gly	1315	1320	1325	
Ala	Tyr	Asp	Ser	Ile	Arg	His	Ala	His	Ser	Gln	Ser	Ala	Glu	Ala	Glu	1330	1335	1340	
Arg	Arg	Ala	Asn	Thr	Ser	Ala	Leu	Ala	Val	Pro	Ser	Pro	Val	Ser	Asn	1345	1350	1355	1360
Ser	Ala	Ser	Ala	Arg	His	Arg	Thr	Glu	Ala	Leu	Met	Asp	Ala	Gln	Lys		1365	1370	1375
Glu	Asp	Phe	Asn	Ser	Lys	His	Met	Ala	Asn	Gln	Arg	Ala	Leu	Gly	Lys		1380	1385	1390
Leu	Ser	Ala	His	Thr	His	Thr	Leu	Ser	Leu	Thr	Asp	Ile	Asn	Glu	Leu	1395	1400	1405	
Val	Cys	Gly	Ala	Pro	Gly	Asp	Ala	Pro	Cys	Ala	Thr	Ser	Pro	Cys	Gly	1410	1415	1420	
Gly	Ala	Gly	Cys	Arg	Asp	Glu	Asp	Gly	Gln	Pro	Arg	Cys	Gly	Gly	Leu	1425	1430	1435	1440
Ser	Cys	Asn	Gly	Ala	Ala	Ala	Thr	Ala	Asp	Leu	Ala	Leu	Gly	Arg	Ala		1445	1450	1455
Arg	His	Thr	Gln	Ala	Glu	Leu	Gln	Arg	Ala	Leu	Ala	Glu	Gly	Gly	Ser	1460	1465	1470	
Ile	Leu	Ser	Arg	Val	Ala	Glu	Thr	Arg	Arg	Gln	Ala	Ser	Glu	Ala	Gln	1475	1480	1485	
Gln	Arg	Ala	Gln	Ala	Ala	Leu	Asp	Lys	Ala	Asn	Ala	Ser	Arg	Gly	Gln	1490	1495	1500	
Val	Glu	Gln	Ala	Asn	Gln	Glu	Leu	Gln	Glu	Leu	Ile	Gln	Ser	Val	Lys	1505	1510	1515	1520
Asp	Phe	Leu	Asn	Gln	Glu	Gly	Ala	Asp	Pro	Asp	Ser	Ile	Glu	Met	Val		1525	1530	1535
Ala	Thr	Arg	Val	Leu	Glu	Leu	Ser	Ile	Pro	Ala	Ser	Ala	Glu	Gln	Ile	1540	1545	1550	
Gln	His	Leu	Ala	Gly	Ala	Ile	Ala	Glu	Arg	Val	Arg	Ser	Leu	Ala	Asp	1555	1560	1565	
Val	Asp	Ala	Ile	Leu	Ala	Arg	Thr	Val	Gly	Asp	Val	Arg	Arg	Ala	Glu	1570	1575	1580	
Gln	Leu	Leu	Gln	Asp	Ala	Arg	Arg	Ala	Arg	Ser	Trp	Ala	Glu	Asp	Glu	1585	1590	1595	1600
Lys	Gln	Lys	Ala	Glu	Thr	Val	Gln	Ala	Ala	Leu	Glu	Glu	Ala	Gln	Arg		1605	1610	1615
Ala	Gln	Gly	Ile	Ala	Gln	Gly	Ala	Ile	Arg	Gly	Ala	Val	Ala	Asp	Thr	1620	1625	1630	
Arg	Asp	Thr	Glu	Gln	Thr	Leu	Tyr	Gln	Val	Gln	Glu	Arg	Met	Ala	Gly	1635	1640	1645	
Ala	Glu	Arg	Ala	Leu	Ser	Ser	Ala	Gly	Glu	Arg	Ala	Arg	Gln	Leu	Asp	1650	1655	1660	
Ala	Leu	Leu	Glu	Ala	Leu	Lys	Leu	Lys	Arg	Ala	Gly	Asn	Ser	Leu	Ala				



Phe	Gly	Asp	Glu	Val	Phe	Asn	Glu	Pro	Lys	Val	Leu	Lys	Ser	Tyr	Tyr	
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Tyr	Ala	Ile	Ser	Asp	Phe	Ala	Val	Gly	Gly	Arg	Cys	Lys	Cys	Asn	Gly	
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His	Ala	Ser	Glu	Cys	Val	Lys	Asn	Glu	Phe	Asp	Lys	Leu	Met	Cys	Asn	
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Cys	Lys	His	Asn	Thr	Tyr	Gly	Val	Asp	Cys	Glu	Lys	Cys	Leu	Pro	Phe	
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Phe	Asn	Asp	Arg	Pro	Trp	Arg	Arg	Ala	Thr	Ala	Glu	Ser	Ala	Ser	Glu	
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Ser	Leu	Pro	Cys	Asp	Cys	Asn	Gly	Arg	Ser	Gln	Glu	Cys	Tyr	Phe	Asp	
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Pro	Glu	Leu	Tyr	Arg	Ser	Thr	Gly	His	Gly	Gly	His	Cys	Thr	Asn	Cys	
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Val	Gly	Ser	Leu	Ser	Thr	Gln	Cys	Asp	Ser	Tyr	Gly	Arg	Cys	Ser	Cys	
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Lys	Pro	Gly	Val	Met	Gly	Asp	Lys	Cys	Asp	Arg	Cys	Gln	Pro	Gly	Phe	
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His	Ser	Leu	Thr	Glu	Ala	Gly	Cys	Arg	Pro	Cys	Ser	Cys	Asp	Leu	Arg	
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Gly	Ser	Thr	Asp	Glu	Cys	Asn	Val	Glu	Thr	Gly	Arg	Cys	Val	Cys	Lys	
	450					455				460						
Asp	Asn	Val	Glu	Gly	Phe	Asn	Cys	Glu	Arg	Cys	Lys	Pro	Gly	Phe	Phe	
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Asn	Leu	Glu	Ser	Ser	Asn	Pro	Lys	Gly	Cys	Thr	Pro	Cys	Phe	Cys	Phe	
				485					490					495		
Gly	His	Ser	Ser	Val	Cys	Thr	Asn	Ala	Val	Gly	Tyr	Ser	Val	Tyr	Asp	
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Ile	Ser	Ser	Thr	Phe	Gln	Ile	Asp	Glu	Asp	Gly	Trp	Arg	Val	Glu	Gln	
		515					520					525				
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Ile	Ala	Val	Ile	Ser	Asp	Ser	Tyr	Phe	Pro	Arg	Tyr	Phe	Ile	Ala	Pro	
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Val	Lys	Phe	Leu	Gly	Asn	Gln	Val	Leu	Ser	Tyr	Gly	Gln	Asn	Leu	Ser	
				565					570					575		
Phe	Ser	Phe	Arg	Val	Asp	Arg	Arg	Asp	Thr	Arg	Leu	Ser	Ala	Glu	Asp	
			580					585					590			
Leu	Val	Leu	Glu	Gly	Ala	Gly	Leu	Arg	Val	Ser	Val	Pro	Leu	Ile	Ala	
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Gln	Pro	Cys	Pro	Cys	Pro	Gly	Gly	Ser	Ser	Cys	Ala	Ile	Val	Pro	Lys
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Lys Tyr Glu Gln Ala Lys Asn Ile Ser Gln Asp Leu Glu Lys Gln Ala  
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 Ala Arg Val His Glu Glu Ala Lys Arg Ala Gly Asp Lys Ala Val Glu  
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 Ile Tyr Ala Ser Val Ala Gln Leu Thr Pro Val Asp Ser Glu Ala Leu  
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 Glu Asn Glu Ala Asn Lys Ile Lys Lys Glu Ala Ala Asp Leu Asp Arg  
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 Leu Ile Asp Gln Lys Leu Lys Asp Tyr Glu Asp Leu Arg Glu Asp Met  
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 Arg Gly Lys Glu His Glu Val Lys Asn Leu Leu Glu Lys Gly Lys Ala  
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 Glu Gln Gln Thr Ala Asp Gln Leu Leu Ala Arg Ala Asp Ala Ala Lys  
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<300>

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35	40	45	
Arg Cys Met Pro Glu Phe Val Asn Ala Ala Phe Asn Val Thr Val Val			
50	55	60	
Ala Thr Asn Thr Cys Gly Thr Pro Pro Glu Glu Tyr Cys Val Gln Thr			
65	70	75	80
Gly Val Thr Gly Val Thr Lys Ser Cys His Leu Cys Asp Ala Gly Gln			
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Pro His Leu Gln His Gly Ala Ala Phe Leu Thr Asp Tyr Asn Asn Gln			
100	105	110	
Ala Asp Thr Thr Trp Trp Gln Ser Gln Thr Met Leu Ala Gly Val Gln			
115	120	125	
Tyr Pro Ser Ser Ile Asn Leu Thr Leu His Leu Gly Lys Ala Phe Asp			
130	135	140	
Ile Thr Tyr Val Arg Leu Lys Phe His Thr Ser Arg Pro Glu Ser Phe			
145	150	155	160
Ala Ile Tyr Lys Arg Thr Arg Glu Asp Gly Pro Trp Ile Pro Tyr Gln			
165	170	175	
Tyr Tyr Ser Gly Ser Cys Glu Asn Thr Tyr Ser Lys Ala Asn Arg Gly			
180	185	190	
Phe Ile Arg Thr Gly Gly Asp Glu Gln Gln Ala Leu Cys Thr Asp Glu			
195	200	205	
Phe Ser Asp Phe Ser Pro Leu Thr Gly Gly Asn Val Ala Phe Ser Thr			
210	215	220	
Leu Glu Gly Arg Pro Ser Ala Tyr Asn Phe Asp Asn Ser Pro Val Leu			
225	230	235	240
Gln Glu Trp Val Thr Ala Thr Asp Ile Arg Val Thr Leu Asn Arg Leu			
245	250	255	
Asn Thr Phe Gly Asp Glu Val Phe Asn Asp Pro Lys Val Leu Lys Ser			
260	265	270	
Tyr Tyr Tyr Ala Ile Ser Asp Phe Ala Val Gly Gly Arg Cys Lys Cys			
275	280	285	
Asn Gly His Ala Ser Glu Cys Met Lys Asn Glu Phe Asp Lys Leu Val			
290	295	300	
Cys Asn Cys Lys His Asn Thr Tyr Gly Val Asp Cys Glu Lys Cys Leu			
305	310	315	320
Pro Phe Phe Asn Asp Arg Pro Trp Arg Arg Ala Thr Ala Glu Ser Ala			
325	330	335	
Ser Glu Cys Leu Pro Cys Asp Cys Asn Gly Arg Ser Gln Glu Cys Tyr			
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Phe Asp Pro Glu Leu Tyr Arg Ser Thr Gly His Gly Gly His Cys Thr			
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Asn Cys Gln Asp Asn Thr Asp Gly Ala His Cys Glu Arg Cys Arg Glu			
370	375	380	
Asn Phe Phe Arg Leu Gly Asn Asn Glu Ala Cys Ser Ser Cys His Cys			
385	390	395	400
Ser Pro Val Gly Ser Leu Ser Thr Gln Cys Asp Ser Tyr Gly Arg Cys			
405	410	415	
Ser Cys Lys Pro Gly Val Met Gly Asp Lys Cys Asp Arg Cys Gln Pro			
420	425	430	
Gly Phe His Ser Leu Thr Glu Ala Gly Cys Arg Pro Cys Ser Cys Asp			
435	440	445	
Pro Ser Gly Ser Ile Asp Glu Cys Asn Val Glu Thr Gly Arg Cys Val			
450	455	460	
Cys Lys Asp Asn Val Glu Gly Phe Asn Cys Glu Arg Cys Lys Pro Gly			
465	470	475	480
Phe Phe Asn Leu Glu Ser Ser Asn Pro Arg Gly Cys Thr Pro Cys Phe			
485	490	495	

Cys	Phe	Gly	His	Ser	Ser	Val	Cys	Thr	Asn	Ala	Val	Gly	Tyr	Ser	Val
			500					505					510		
Tyr	Ser	Ile	Ser	Ser	Thr	Phe	Gln	Ile	Asp	Glu	Asp	Gly	Trp	Arg	Ala
		515					520					525			
Glu	Gln	Arg	Asp	Gly	Ser	Glu	Ala	Ser	Leu	Glu	Trp	Ser	Ser	Glu	Arg
	530					535					540				
Gln	Asp	Ile	Ala	Val	Ile	Ser	Asp	Ser	Tyr	Phe	Pro	Arg	Tyr	Phe	Ile
545					550					555					560
Ala	Pro	Ala	Lys	Phe	Leu	Gly	Lys	Gln	Val	Leu	Ser	Tyr	Gly	Gln	Asn
			565						570					575	
Leu	Ser	Phe	Ser	Phe	Arg	Val	Asp	Arg	Arg	Asp	Thr	Arg	Leu	Ser	Ala
			580					585					590		
Glu	Asp	Leu	Val	Leu	Glu	Gly	Ala	Gly	Leu	Arg	Val	Ser	Val	Pro	Leu
		595					600					605			
Ile	Ala	Gln	Gly	Asn	Ser	Tyr	Pro	Ser	Glu	Thr	Thr	Val	Lys	Tyr	Val
	610					615						620			
Phe	Arg	Leu	His	Glu	Ala	Thr	Asp	Tyr	Pro	Trp	Arg	Pro	Ala	Leu	Thr
625					630					635					640
Pro	Phe	Glu	Phe	Gln	Lys	Leu	Leu	Asn	Asn	Leu	Thr	Ser	Ile	Lys	Ile
				645					650					655	
Arg	Gly	Thr	Tyr	Ser	Glu	Arg	Ser	Ala	Gly	Tyr	Leu	Asp	Asp	Val	Thr
			660					665					670		
Leu	Ala	Ser	Ala	Arg	Pro	Gly	Pro	Gly	Val	Pro	Ala	Thr	Trp	Val	Glu
		675					680					685			
Ser	Cys	Thr	Cys	Pro	Val	Gly	Tyr	Gly	Gly	Gln	Phe	Cys	Glu	Met	Cys
	690					695					700				
Leu	Ser	Gly	Tyr	Arg	Arg	Glu	Thr	Pro	Asn	Leu	Gly	Pro	Tyr	Ser	Pro
705					710					715					720
Cys	Val	Leu	Cys	Ala	Cys	Asn	Gly	His	Ser	Glu	Thr	Cys	Asp	Pro	Glu
				725					730					735	
Thr	Gly	Val	Cys	Asn	Cys	Arg	Asp	Asn	Thr	Ala	Gly	Pro	His	Cys	Glu
			740					745					750		
Lys	Cys	Ser	Asp	Gly	Tyr	Tyr	Gly	Asp	Ser	Thr	Ala	Gly	Thr	Ser	Ser
		755					760					765			
Asp	Cys	Gln	Pro	Cys	Pro	Cys	Pro	Gly	Gly	Ser	Ser	Cys	Ala	Val	Val
	770					775					780				
Pro	Lys	Thr	Lys	Glu	Val	Val	Cys	Thr	Asn	Cys	Pro	Thr	Gly	Thr	Thr
785					790					795					800
Gly	Lys	Arg	Cys	Glu	Leu	Cys	Asp	Asp	Gly	Tyr	Phe	Gly	Asp	Pro	Leu
				805					810					815	
Gly	Arg	Asn	Gly	Pro	Val	Arg	Leu	Cys	Arg	Leu	Cys	Gln	Cys	Ser	Asp
			820					825					830		
Asn	Ile	Asp	Pro	Asn	Ala	Val	Gly	Asn	Cys	Asn	Arg	Leu	Thr	Gly	Glu
		835					840					845			
Cys	Leu	Lys	Cys	Ile	Tyr	Asn	Thr	Ala	Gly	Phe	Tyr	Cys	Asp	Arg	Cys
	850					855				860					
Lys	Asp	Gly	Phe	Phe	Gly	Asn	Pro	Leu	Ala	Pro	Asn	Pro	Ala	Asp	Lys
865					870					875					880
Cys	Lys	Ala	Cys	Asn	Cys	Asn	Pro	Tyr	Gly	Thr	Met	Lys	Gln	Gln	Ser
				885					890					895	
Ser	Cys	Asn	Pro	Val	Thr	Gly	Gln	Cys	Glu	Cys	Leu	Pro	His	Val	Thr
		900						905					910		
Gly	Gln	Asp	Cys	Gly	Ala	Cys	Asp	Pro	Gly	Phe	Tyr	Asn	Leu	Gln	Ser
		915					920					925			
Gly	Gln	Gly	Cys	Glu	Arg	Cys	Asp	Cys	His	Ala	Leu	Gly	Ser	Thr	Asn
	930					935					940				
Gly	Gln	Cys	Asp	Ile	Arg	Thr	Gly	Gln	Cys	Glu	Cys	Gln	Pro	Gly	Ile
945					950					955					960
Thr	Gly	Gln	His	Cys	Glu	Arg	Cys	Glu	Val	Asn	His	Phe	Gly	Phe	Gly
				965					970					975	
Pro	Glu	Gly	Cys	Lys	Pro	Cys	Asp	Cys	His	Pro	Glu	Gly	Ser	Leu	Ser

			980				985				990				
Leu	Gln	Cys	Lys	Asp	Asp	Gly	Arg	Cys	Glu	Cys	Arg	Glu	Gly	Phe	Val
995			1000				1005								
Gly	Asn	Arg	Cys	Asp	Gln	Cys	Glu	Glu	Asn	Tyr	Phe	Tyr	Asn	Arg	Ser
1010			1015				1020								
Trp	Pro	Gly	Cys	Gln	Glu	Cys	Pro	Ala	Cys	Tyr	Arg	Leu	Val	Lys	Asp
1025			1030				1035				1040				
Lys	Val	Ala	Asp	His	Arg	Val	Lys	Leu	Gln	Glu	Leu	Glu	Ser	Leu	Ile
			1045				1050				1055				
Ala	Asn	Leu	Gly	Thr	Gly	Asp	Glu	Met	Val	Thr	Asp	Gln	Ala	Phe	Glu
			1060				1065				1070				
Asp	Arg	Leu	Lys	Glu	Ala	Glu	Arg	Glu	Val	Met	Asp	Leu	Leu	Arg	Glu
			1075				1080				1085				
Ala	Gln	Asp	Val	Lys	Asp	Val	Asp	Gln	Asn	Leu	Met	Asp	Arg	Leu	Gln
1090			1095				1100								
Arg	Val	Asn	Asn	Thr	Leu	Ser	Ser	Gln	Ile	Ser	Arg	Leu	Gln	Asn	Ile
1105			1110				1115				1120				
Arg	Asn	Thr	Ile	Glu	Glu	Thr	Gly	Asn	Leu	Ala	Glu	Gln	Ala	Arg	Ala
			1125				1130				1135				
His	Val	Glu	Asn	Thr	Glu	Arg	Leu	Ile	Glu	Ile	Ala	Ser	Arg	Glu	Leu
			1140				1145				1150				
Glu	Lys	Ala	Lys	Val	Ala	Ala	Ala	Asn	Val	Ser	Val	Thr	Gln	Pro	Glu
1155			1160				1165								
Ser	Thr	Gly	Asp	Pro	Asn	Asn	Met	Thr	Leu	Leu	Ala	Glu	Glu	Ala	Arg
1170			1175				1180								
Lys	Leu	Ala	Glu	Arg	His	Lys	Gln	Glu	Ala	Asp	Asp	Ile	Val	Arg	Val
1185			1190				1195				1200				
Ala	Lys	Thr	Ala	Asn	Asp	Thr	Ser	Thr	Glu	Ala	Tyr	Asn	Leu	Leu	Leu
			1205				1210				1215				
Arg	Thr	Leu	Ala	Gly	Glu	Asn	Gln	Thr	Ala	Phe	Glu	Ile	Glu	Glu	Leu
1220			1225				1230								
Asn	Arg	Lys	Tyr	Glu	Gln	Ala	Lys	Asn	Ile	Ser	Gln	Asp	Leu	Glu	Lys
1235			1240				1245								
Gln	Ala	Ala	Arg	Val	His	Glu	Glu	Ala	Lys	Arg	Ala	Gly	Asp	Lys	Ala
1250			1255				1260								
Val	Glu	Ile	Tyr	Ala	Ser	Val	Ala	Gln	Leu	Ser	Pro	Leu	Asp	Ser	Glu
1265			1270				1275				1280				
Thr	Leu	Glu	Asn	Glu	Ala	Asn	Asn	Ile	Lys	Met	Glu	Ala	Glu	Asn	Leu
			1285				1290				1295				
Glu	Gln	Leu	Ile	Asp	Gln	Lys	Leu	Lys	Asp	Tyr	Glu	Asp	Leu	Arg	Glu
1300			1305				1310								
Asp	Met	Arg	Gly	Lys	Glu	Leu	Glu	Val	Lys	Asn	Leu	Leu	Glu	Lys	Gly
1315			1320				1325								
Lys	Thr	Glu	Gln	Gln	Thr	Ala	Asp	Gln	Leu	Leu	Ala	Arg	Ala	Asp	Ala
1330			1335				1340								
Ala	Lys	Ala	Leu	Ala	Glu	Glu	Ala	Ala	Lys	Lys	Gly	Arg	Asp	Thr	Leu
1345			1350				1355				1360				
Gln	Glu	Ala	Asn	Asp	Ile	Leu	Asn	Asn	Leu	Lys	Asp	Phe	Asp	Arg	Arg
			1365				1370				1375				
Val	Asn	Asp	Asn	Lys	Thr	Ala	Ala	Glu	Glu	Ala	Leu	Arg	Lys	Ile	Pro
1380			1385				1390								
Ala	Ile	Asn	Gln	Thr	Ile	Thr	Glu	Ala	Asn	Glu	Lys	Thr	Arg	Glu	Ala
1395			1400				1405								
Gln	Gln	Ala	Leu	Gly	Ser	Ala	Al								

Lys	Glu	Leu	Lys	Arg	Lys	Gln	Asp	Ala	Asp	Gln	Asp	Met	Met	Met			
1475						1480					1485						
Ala	Gly	Met	Ala	Ser	Gln	Ala	Ala	Gln	Glu	Ala	Glu	Ile	Asn	Ala	Arg		
1490						1495					1500						
Lys	Ala	Lys	Asn	Ser	Val	Thr	Ser	Leu	Leu	Ser	Ile	Ile	Asn	Asp	Leu		
1505						1510					1515					1520	
Leu	Glu	Gln	Leu	Gly	Gln	Leu	Asp	Thr	Val	Asp	Leu	Asn	Lys	Leu	Asn		
1525						1530					1535						
Glu	Ile	Glu	Gly	Thr	Leu	Asn	Lys	Ala	Lys	Asp	Glu	Met	Lys	Val	Ser		
1540						1545					1550						
Asp	Leu	Asp	Arg	Lys	Val	Ser	Asp	Leu	Glu	Asn	Glu	Ala	Lys	Lys	Gln		
1555						1560					1565						
Glu	Ala	Ala	Ile	Met	Asp	Tyr	Asn	Arg	Asp	Ile	Glu	Glu	Ile	Met	Lys		
1570						1575					1580						
Asp	Ile	Arg	Asn	Leu	Glu	Asp	Ile	Arg	Lys	Thr	Leu	Pro	Ser	Gly	Cys		
1585						1590					1595					1600	
Phe	Asn	Thr	Pro	Ser	Ile	Glu	Lys	Pro									
1605																	